Vol. 2 SEPTEMBER · 1939 No. 3

LLOYDIA

A Quarterly Journal of Biological Science

Published by the Lloyd Library and Museum, Cincinnati, Ohio

Notes on a Collection of Plants from British Guiana

A. C. Smith (and Collaborators)

(New York Botanical Garden, New York, N.Y.)

The purpose of the present paper is to discuss the new and otherwise noteworthy plants collected in 1937 and 1938 by the writer in British Guiana and adjacent northern Brazil. These specimens, representing about 1600 field numbers, were obtained under the auspices of several institutions. Numbers 2101 to 3078 inclusive were collected during the American Museum of Natural History Terry-Holden Expedition; numbers 3079 to 3678 inclusive were obtained under the joint auspices of the New York Botanical Garden, the Arnold Arboretum, and the Yale School of Forestry. From 10 to 15 duplicate sets have been distributed to leading American and European herbaria. I wish to take this opportunity to acknowledge the generosity of the collaborating institutions in making the collection possible, and in particular to extend thanks to Dr. William Hall Holden and Mrs. Franklin P. Terry.

The region covered was the southern part of British Guiana drained by the Rupununi and upper Essequibo Rivers. Discussions of the region have already been published.[1] The number of specimens obtained on the actual southern boundary of the colony and in adjacent Brazil is very small, and consequently in the following discussion the locality may be taken as British Guiana unless otherwise noted. No attempt has been made to mention all the plants collected, since such a list would include a great number of common species which are abundant in British Guiana, although they may not have been recorded in the section of the colony covered by the present collection. In this treatment 145 species are mentioned, including 50 here described for the first time and one new variety. In addition, 62 other species appear to be new to British Guiana and are so mentioned in the text, although such records are necessarily often uncertain. Four new combinations are made. In addition to the plants mentioned in the present

[1] Smith, A. C. Plant Collecting in British Guiana. Jour. N. Y. Bot. Gard. **40**: 10–21, 35–39. *illust.*1939; Botanical Exploration of Interior British Guiana. Trop. Woods **57**: 6–11.1939.

paper, seven species, based on the collection, have already been elsewhere described as new.[2]

I have been fortunate in enlisting the aid of many collaborators in identifying the specimens, and the notes of some are here incorporated. In fact, the major part of this paper has been contributed by specialists, and the collector's authorship is for the most part nominal. I take this opportunity to acknowledge my indebtedness to the students who have been generous with their aid: E. J. Alexander, A. G. H. Alston, E. B. Bartram, M. Burret, L. Croizat, C. W. Dodge, Francis Drouet, J. D. Dwyer, R. E. Fries, M. H. Fulford, Charles Gilly, H. A. Gleason, I. M. Johnston, E. P. Killip, B. A. Krukoff, E. C. Leonard, H. N. Moldenke, C. V. Morton, Ruth Patrick, F. W. Pennell, N. Y. Sandwith, L. B. Smith, P. C. Standley, J. A. Steyermark, H. K. Svenson, J. R. Swallen, C. A. Weatherby, L. O. Williams, and R. E. Woodson.

The first set of the collection, including types unless otherwise noted, is deposited in the herbarium of the New York Botanical Garden.

HYMENOPHYLLACEAE*

TRICHOMANES PUNCTATUM Poir.

Basin of Essequibo River, near mouth of Onoro Creek, lat. about 1°35′N., dense forest, *Smith 2795a;* rootstock appressed to tree-trunk. This is *T. punctatum* as understood by Maxon (Sci. Surv. Porto Rico & Virgin Isls. **6:** 496.1926), not of Small's Ferns of the Southeastern States nor of Posthumus (which is *T. lineolatum* v. d. B.). A photograph of Poiret's type in the Gray Herbarium indicates that Maxon's interpretation is correct.

TRICHOMANES TUERCKHEIMII Christ

Basin of Essequibo River, near mouth of Blackwater Creek, lat. about 1°35′N., dense forest, *Smith 2824;* rootstock and fronds closely appressed to tree-trunks. The species has hitherto been known only from Central America and Peru.

CYATHEACEAE*

HEMITELIA BORYANA Mett. ex char.

Hemitelia Leprieurii Jenm.

Basin of Shodikar Creek (Essequibo tributary), lat. about 1°18′N., dense forest, *Smith 2873*. The specimens agree excellently with the type of *H. Leprieurii* Jenm. and also with Mettinius' description of *H. Boryana*.

---

[2] See Bartram, Edwin B. Mosses of Interior British Guiana. Bull. Torrey Club **66:** 221–230. *f.* 1, 2.1939. See also Smith, A. C. Studies of South American Plants—VII. Notes on Quiinaceae. Trop. Woods **58**: 25–32.1939; Studies of South American Plants—VIII. New and Noteworthy Species of Lecythidaceae. Am. Jour. Bot. **26:** 407–412.1939.

* By C. A. Weatherby.

Jenman's description of the lamina as "quite naked" is incorrect; it is actually minutely strigillose beneath. Neither he nor Mettenius mentions the relatively large (2 mm. long), thin, flat, deltoid-ovate scales, whitish, or brown at base and whitish above, which are sparsely present along the costules beneath in Jenman's type and in the present collection.

Posthumus treats *H. Boryana* as a synonym of *H. macrocarpa* Presl, but the description of the former does not at all agree with *Sagot 842*, which he cites as representative of the latter. Jenman's name cannot be used in any case because of the earlier *H. Leprieurii* Kze.

POLYPODIACEAE*

Dryopteris (Eugoniopteris) kanukuana Weatherby, sp. nov.

Rhizoma breve horizontale basibus frondium casorum dense onustum, radices crassas emittens, apice paleis teneris brunneis integris linearisubulatis c. 1.5 cm. longis e basi 1.5–2 mm. lato in apicem longum acuminatum gradatim attenuatis pilis minutis stellatis sparse conspersis tectum. Palearum cellulae oblongae parietibus tenuibus. Frons 8 dm. alta. Stipes c. 4 dm. longa, laminam aequans crassiuscula diametro 3–4 mm. supra sulcata subtus semiteres straminea vel pallide brunnea, cum omnibus frondis partibus plus minusve stellato-puberulens, pilis basin versus simplicibus superne aut furcatis aut stellatim 3–5-ramosis. Lamina late ovata vel fere quadrangularis imparipinnata. Pinnae c. 8-jugae alternae oblongo-lineares 18–20 cm. longae 3.5–5 cm. latae sessiles vel infimae breviter petiolulatae basi inaequaliter cuneatae superiores latere inferiore rachin adnatae, apice subabrupte in acumen integrum vel leviter crenatum contractae, $\frac{1}{5}$–$\frac{1}{4}$ ad costam lobatae, laciniis integris c. 5 mm. latis et aequilongis obtusis vel subacutis leviter falcatis. Pinna terminalis similis. Venae 6–10-jugae e costula sub angulo acuto egredientes valde adscendentes, infimae liberae vel sub angulo acuto more meniscii conniventes sinum non attingentes, proxima 2 vel 3 juga ad membranam in sinum currentem vel ad sinum ipsum conniventia, reliquae liberae. Vena infima latere inferiore saepe e costa oriens. Margo, costa in paginis ambobus, costulae venaeque supra et interdum subtus pilis cylindricis albescentibus rigidis simplicibus vel furcatis 1 mm. vel minus longis sparse onustae. Sori submediani, sporangiis (in specimine viso plerumque permaturis) ut videtur glabris. Indusium persistens pilis simplicibus dense setosum. Spori non visi. (Fig. 1. *4–6*)

Type, *Smith 3487*, collected Apr. 7, 1938, in dense forest on northwestern slopes of Kanuku Mountains in drainage of Moku-moku Creek (Takutu tributary), alt. 200–300 m. The specimen is a unicate, a photo of which is in the Gray Herbarium. Most of the characters of *D. kanukuana* occur in

* By C. A. Weatherby.

other species of the section *Eugoniopteris*. *D. juruensis* (perhaps its nearest relative) has similar lobing and venation, several species have somewhat similar pubescence, and several others persistent setose indusia. But nothing heretofore described has the combination of characters found in this plant.

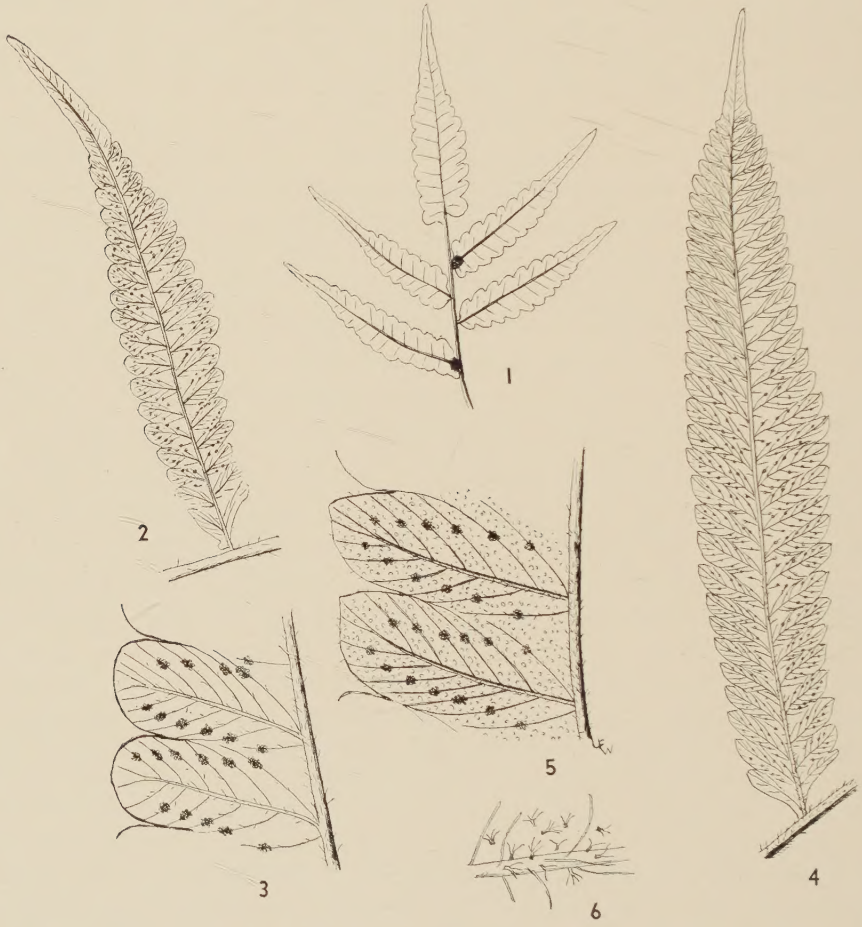

FIG. 1. *Dryopteris*. *1–3. D. gonophora; 1.* tip of lamina, showing gemmae (x¼); *2.* pinna (x½); *3.* two lobes, showing venation (x2). *4–6. D. kanukuana; 4.* pinna (x½); *5.* two lobes (x2); *6.* portion of costule, showing pubescence (x10).

Dryopteris (Eugoniopteris) gonophora Weatherby, sp. nov.

Rhizoma ut videtur horizontale vel obliquum radicibus crassis glabris nigrescentibus dense onustum apice sparse paleaceum. Paleae 4–5 mm. longae basi c. 1.5 mm. latae longe acuminatae integrae brunneae pilis stellatis sparse puberulentes, cellulis oblongis parietibus tenuibus. Frondes

fasciculatae 50–80 cm. longae. Stipes pallide brunneus angulatus supra canaliculatus quam lamina brevior vel eam subaequans, pilis basin versus simplicibus superne stellatim ramosis minute sparseque puberulens. Lamina oblongo- vel deltoideo-ovata ad 34 cm. longa et 30 cm. lata pinnata. Rachis pallide brunnea supra canaliculata pilis aliis minutis stellatis aliis longioribus simplicibus cylindricis intermixtis pubescens. Pinnae membranaceae c. 10-jugae ad 15 cm. longae et 3 cm. latae elliptico-lanceolatae acuminatae sessiles vel brevissime petiolatae nullo modo adnatae; inferiores medianaeque ab apice ad tertiam partem longitudinis integrae alibi $\frac{1}{4}$–$\frac{1}{3}$ ad costam lobatae, lobis late rotundato-obtusis vel subtruncatis integris vix falcatis, basi subaequaliter cuneatae, costis nervisque exceptis glabrae; superiores (3 vel 4 juga) minora, saepe pagina superiore ad rachin gemmas sphaericas paleaceas gerentes; pinna terminalis bene evoluta c. 10 cm. longa a pinna proxima laterali spatio 1 cm. remota, quam pinnae laterales profundius ($\frac{1}{2}$ ad costam) lobata, caetera eis similis. Costae stramineae, pagina inferiore pilis brevissimis stellatis et aliis longioribus simplicibus pubescentes, pagina superiore substrigosae. Venae 4–7 (plerumque 6)-jugae omnes e costula angulo acuto vel rarius infima latere inferiore e costa egredientes, leviter arcuatae; jugum infimum plerumque liberum in parenchymate terminans sinum non attingens; jugum secundum ad sinum connivens; altera ad marginem supra sinum currentia, cum costula sparse pilis patentibus simplicibus rigidis brevibus onustae. Sori mediani vel paullo supramediani, indusio subpersistente parvo pilis simplicibus setoso muniti. Sporangia glabra; spori non visi. (Fig. 1. *1–3*)

Type, *Smith 3283*, collected Mar. 17, 1938, in dense forest at western extremity of Kanuku Mountains in drainage of Takutu River, alt. 600 m. The specimen is a unicate, a photo of which is in the Gray Herbarium. Except as most species of *Dryopteris* subgenus *Goniopteris* are rather closely allied, *D. gonophora* seems not to be nearly related to anything hitherto described. It is not even clearly to be assigned either to § *Eugoniopteris* or § *Asterochlaena*. However, the upper pinnae, though more or less reduced, are quite distinct and not at all adnate, and the transition to the entirely separate and narrow-based (not at all hastate or pinnatifid) terminal pinna is abrupt—characters which would seem to place the species better in *Eugoniopteris*. In that section, it shares its gemmiparous habit only with *D. vivipara*, a species otherwise quite different in pubescence, venation, degree of lobing, etc.

Dryopteris nesiotica Maxon & Morton

Northwestern slopes of Kanuku Mountains, in drainage of Moku-moku Creek (Takutu tributary), in dense forest, *Smith 3554*. Previously known only from the type collection from Trinidad. The present specimens agree

with the description except that the lower pinnae of both fertile and sterile fronds are distinctly petiolulate. The type collection had no rhizome; one of the present collection has part of one. The original description may therefore be supplemented to the following extent: rhizome c. 1.5 cm. in diameter, horizontal, apparently branched, hard, woody, black and nearly naked; roots thick and fleshy.

DRYOPTERIS EFFUSA (Sw.) Urban

Northwestern slopes of Kanuku Mountains, in drainage of Moku-moku Creek (Takutu tributary), in dense forest, *Smith 3553*. In one form or another widely distributed in the American tropics, but not recorded from British Guiana by Posthumus.

DRYOPTERIS SANCTI-GABRIELI (Hook.) Kuntze

Basin of Essequibo River, near mouth of Onoro Creek, lat. about 1°35′N., in dense swampy forest, *Smith 2745*. Known from Trinidad, Venezuela, and Brazil, but not recorded from the Guianas by Posthumus or Christensen.

CYCLOPELTIS SEMICORDATA (Sw.) J. Sm.

Northwestern slopes of Kanuku Mountains, in drainage of Moku-moku Creek (Takutu tributary), in dense forest, *Smith 3542;* fronds spreading from a large subterranean rootstock. West Indies, Trinidad, French and Dutch Guiana; Mexico to Bolivia. Not recorded from British Guiana by Posthumus.

POLYBOTRYA OSMUNDACEA H. & B. ex Willd.

Brazil-British Guiana Boundary: Akarai Mountains, on height of land between Rio Mapuera (Trombetas tributary) and Shodikar Creek (Essequibo tributary), 600–800 m., *Smith 2984;* rootstock appressed to tree-trunk; locally abundant in dense forest but never found fertile.

Although of wide distribution in the American tropics, this species appears to be rare in the Guianas; Posthumus lists only a single collection from British Guiana and none from French Guiana or Surinam. The present collection represents what appears, from the rather meager material at hand, to be the prevailing form in the Lesser Antilles, where various transitional phases occur, and in northern South America. In it the rachis, costae, costules, and even ultimate veins beneath are more or less pilose with hairs about 1 mm. long. In the prevailing form of Cuba and Jamaica these parts are short-pubescent or glabrate.

LINDSAEA MAZARUNENSIS Jenm.

Basin of Kuyuwini River (Essequibo tributary) about 150 miles from mouth, terrestrial in dense forest at edge of isolated savanna, *Smith 2622*.

Jenman's name is applied to this collection with doubt. It agrees with his type in habit and in its quadrangular castaneous rachis and stipe. It is unlike it in its more lunate (as against truncate at apex) pinnae, its more numerous nerves, somewhat prominulous in the dried state, and in the narrower space between the indusium and the margin. But Jenman's specimen is young and ours fully mature, which may account for some of the differences.

Very like are *Britton & Hazen 369* from Trinidad, *de la Cruz 1556* from British Guiana, and *Dusén 15013* from Paraná, Brazil, though in them the leaf-texture is apparently thicker and the veins not prominulous in the dried material. Undoubtedly, these specimens represent a series of closely related forms, differing as a whole from *L. portoricensis* in their larger size and the presence of a definite terminal pinnule, and from *L. lancea* (to which Posthumus was inclined to refer Jenman's species) in the small number of lateral pinnae (one or two pairs only) and in their castaneous stipes and rachises. Their exact taxonomic status and nomenclature must await monographic study.

Doryopteris Raddiana (Presl) Fée

Northwestern portion of Kanuku Mountains, open rocky summit of Mount Iramaikpang, alt. 975 m., *Smith 3655;* densely tufted on rocks. Previously recorded from Brazil. This is the plant of the Lesser Antilles and South America usually referred by collectors to *D. pedata* and very probably only a variety of that species. It differs from the typical phase of *D. pedata* mainly in its stouter habit, its much more nearly terete and somewhat paleaceous stipe, and its proportionally broader and much more dissected lamina. The stipe varies from nearly glabrous to puberulent throughout. The latter form clearly and probably the former also are described by Raddi under *Pteris pedata*. Presl founded his *Litobrochia Raddiana* on Raddi's *P. pedata* var. γ. This is a rather extreme leaf-form, known to me only from Raddi's illustration; but there seems every likelihood that he was right in regarding it as merely a phase of what he called *P. pedata*, and that Presl's name may properly be used to cover the entire group concerned.

Doryopteris varians (Raddi) J. Sm.

Western extremity of Kanuku Mountains in drainage of Takutu River, alt. 600 m., *Smith 3296;* in dense tufts on boulders in dense forest. Previously reported from Brazil. I have not seen authentic material of Raddi's species. However, the present collection agrees in most respects with an isotype of *D. angularis* Fée which I have seen, differing only in the minutely strigillose stipe (a character which is found in most Brazilian material referred to *D. varians*) and the proportionally more developed cen-

tral segment of the lamina. Fée also states that his species is gemmiferous, but no gemmae were found in the isotype.

D. angularis has been generally and I believe correctly referred to the synonymy of *D. varians*, Raddi's drawing of which it closely resembles; I am therefore applying Raddi's name to the present collection. The species is not listed by Posthumus, but he may have included material of it under *D. collina*.

DORYOPTERIS PEDATA (L.) Fée

Western extremity of Kanuku Mountains in drainage of Takutu River, alt. 600 m., *Smith 3295;* growing with the preceding. Not listed by Posthumus from any of the Guianas. This is typical *D. pedata*, characterized by the black central band of the rhizome-scales, the blackish stipe, puberulent on the flattened or shallowly sulcate upper face and sharply angled at the margins of this face, the slightly crenate or entire margins of the sterile lamina with small and inconspicuous hydathodes at the vein-ends, and the elongate and usually only pinnatifid central segment of the lamina. This typical form is at least most common in the Greater Antilles and appears to be rare in South America.

POLYPODIUM PLUMULA H. & B. ex Willd.

Western extremity of Kanuku Mountains in drainage of Takutu River, alt. 600 m., *Smith 3289;* in dense clumps on boulders in dense forest. Although a widely distributed and apparently common species in the American tropics, *P. plumula* is not listed by Posthumus except as the segregate *P. hygrometricum* Splitg., and this not from British Guiana.

POLYPODIUM VENUSTUM Desv.

Polypodium pectinatum var. *caespitosum* Jenm.

Basin of Essequibo River, near mouth of Onoro Creek, lat. about 1°35′ N., *Smith 2781;* epiphyte in dense swampy forest. Basin of Shodikar Creek (Essequibo tributary), lat. about 1°18′ N., *Smith 3010;* epiphyte in dense forest.

Apparently a good species, differing from *P. pectinatum* in its sessile fronds, attenuate-based lamina, simpler venation, and pubescence of long articulated hairs, and from *P. paradiseae*, to which it is more closely allied, in its sessile fronds, broadly obtuse parallel-sided segments, and in its mostly only once-forked veins. The present collections are an excellent match for Jenman's type and for the photograph and amplified description of Desvaux's (for this, see Weatherby, Contr. Gray Herb. **114**: 33.1939).

POLYPODIUM POLYPODIOIDES (L.) Watt var. BURCHELLII (Baker) Weatherby

Western extremity of Kanuku Mountains in drainage of Takutu River, alt. 600 m., *Smith 3288;* in dense mats on boulders in dense forest. I had

previously seen no specimens of this variety from British Guiana, although the collections cited by Posthumus under *P. polypodioides* may very well belong to it. To the range given in my paper (Contr. Gray Herb. **114**: 29. 1939)—French Guiana and Colombia to Bolivia and Central Brazil—may be added Coclé Province, Panama (coll. Seibert).

Polypodium fuscopunctatum Hook.

Polypodium chinabowense Jenm.

Basin of Shodikar Creek (Essequibo tributary), lat. about 1°18′ N., *Smith 3015;* rootstock appressed to tree-trunk in dense forest. Except for Jenman's collection, this was previously known only from Ecuador and Peru, a range comparable to that of *Trichomanes Tuerckheimii*. Jenman's type of *P. chinabowense* is an exact match for Peruvian and Ecuadorian specimens of *P. fuscopunctatum*.

MARATTIACEAE*

Danaea polymorpha Leprieur ex char.

Basin of Essequibo River, near mouth of Onoro Creek, lat. about 1°35′ N., *Smith 2758;* terrestrial in dense forest along creek. *D. polymorpha* is treated as a synonym of *D. elliptica* by Underwood & Benedict (N. Am. Flora **16**: 18.1909) and by Posthumus. However, the Guiana specimens differ from typical *D. elliptica* of the Greater Antilles in the single articulation of the stipe, thinner pinnae, the terminal tending to be larger than the lateral, more widely spaced veins (8–9 to the centimeter as against 10–12 in *D. elliptica*), and more strongly ciliate scales. They also have some resemblance to *D. trifoliata* Reichenb., but the one specimen I have seen which seems clearly referable to that species (*Leprieur*, Canopi, French Guiana, 1836) has slender curved scarcely immersed synangia, like those of *D. nodosa*. The thicker and straighter synangia of the Guiana plant are immersed, as in *D. elliptica*.

Material from Trinidad (*Fendler 28; Britton, Hazen & Mendelson 1358; Hombersley 358*) and from Haiti (*Leonard 9310*) shows uniformly two articulations in the stipe, and the terminal pinna is usually little, if any, larger than the lateral pinnae; but in other respects it is so like the Guiana plant that I believe it also should be referred to *D. polymorpha*.

CYPERACEAE**

Fintelmannia Lhotzkyana (Nees) Pfeiff.

Northwestern portion of Kanuku Mountains, on open rocky summit of Mount Iramaikpang, alt. 975 m., *Smith 3643*. This species is fairly abundant in the mentioned locality, where it is densely matted in cracks of the

* By C. A. Weatherby.
** By Charles Gilly.

rocks and where, together with the moss *Campylopus savannarum* C. M., it is the most conspicuous ground-cover. Apparently it has been previously collected only in southern Brazil.

ERIOCAULACEAE*

ERIOCAULON TENUIFOLIUM Kl.

Basin of Rupununi River, Wichabai, lat. about 2°52′N., savanna, *Smith 2280*. Previously known only from Schomburgk's original collections (*285*, *448*) from the vicinity of Pirara, on the savannas north of the Kanuku Mountains, and from *Tate 3*, from the Rio Negro region of Brazil.

PHILODICE HOFFMANNSEGGII Mart.

Basin of Rupununi River, Wichabai, lat. about 2°52′N., savanna, *Smith 2284*. New to British Guiana; previously known from Brazil (Para to Minas Geraes and Matto Grosso) and Venezuela (lower Orinoco region).

SYNGONANTHUS HUBERI Ruhl.

Basin of Essequibo River, Head Falls, lat. about 6°7′N., on sandy banks, *Smith 2112*. New to British Guiana; previously known only from Marajo on Rio Arary (*Huber 173*) and Camanaos on Rio Negro (*Tate 123*) in northern Brazil.

PONTEDERIACEAE**

Eichornia heterosperma Alexander, sp. nov.

Planta *E. azureae* (Sw.) Kunth affinis, spicarum rhachidibus glabris et plerumque in spathis involutis, perianthii tubo quam limbo 2½–3-plo longiore, perianthii lobis non laceratis, filamentis glabris differt.

Plant perennial, floating on shallow water or sprawling on mud, the stems of continuous branching growth, the branches short and closely spaced; leaves with uninflated petioles up to 14 cm. long, the blades elliptic to obovate, up to 8 cm. long, obtuse or blunt at apex, cuneate at base; stipules long-persistent, 5–6 cm. long, truncate at apex; inflorescence spiciform, 5–6 cm. long, glabrous or with a few scattered resinous glands, the rachis equaling the spathe or slightly longer; flowers pale blue, resinous-glandular without, the perianth tube 15–18 mm. long, the limb spreading, the lobes 5–7 mm. long, the three outer lobes broadly lanceolate and acute, the three inner ones obovate and obtuse, all entire; filaments glabrous, the anthers sagittate, blue-green; stigma pubescent; capsule 5–8 mm. long, the seeds of several sizes varying from 1–1.8 mm. long and 0.5–0.8 mm. wide, columnar with 10 short-winged ridges, the seed-body yellow-brown and horizontally striate.

* By Harold N. Moldenke.
** By E. J. Alexander.

Type, *Smith 2290*, collected Oct. 26, 1937, in shallow pond on savanna near Wichabai, basin of Rupununi River, lat. about 2°52′N. Other specimens referable to this species, in the herbarium of the New York Botanical Garden, are: BRAZIL: Ceara: *Drouet 2179, 2649*; COSTA RICA: Laguna de Buenos Aires, *Pittier 10554*; CUBA: Havana: Arroyo Perdigon, Coralillo, *Leon & Nivard*.

Because of inadequate flowering material, this species was not recognized as distinct by the author in North American Flora,[3] but its seeds were described as those of *E. azurea*. The full flowering and fruiting material of the type collection makes possible recognition of the species.

ZINGIBERACEAE*

Renealmia chrysotricha Peters.

Western extremity of Kanuku Mountains, in drainage of Takutu River, dense forest, 600 m., *Smith 3154*. This plant, which is not uncommon at middle elevations in the Kanukus, has previously been reported only from eastern Brazil.

Costus ramosus Woodson, sp. nov.

Herba valida usque 5 m. alta. Caules ut dicuntur volubile ramosi. Folia oblongo-elliptica basi obtusa apice acute acuminata subsessilia vel brevissime petiolata 20–30 cm. longa 8–9 cm. lata superne minor inferne elaminata glabra vel margine minutissime ciliolata; vagina 3.5–4 cm. longa striata minute puberula; ligula obtuse 2-lobata 0.8–1 cm. longa dense minuteque puberula. Spica ovoidea 11–13 cm. longa basi ca. 3.5 cm. diam. ramulos laterales 35–40 cm. longos vaginis oblique truncatis 2–3.5 cm. longis apice foliosos terminans; bracteae oblongo-ovatae exappendiculatae late obtusae 2.5–4 cm. longae viridi-roseae striatae infra apicem breviter calloso-lineatae minutissime sparseque puberulae; bracteola 3 cm. longa oblongo-lanceolata acuta rosea minutissime puberula; flores ut dicuntur albi apice rosei vel aurei, ovarium 7–8 mm. longum globosum puberulum, calyx 2 cm. longus turbinatus acute tridentatus minute puberulus saturate roseus dentes 0.5 cm. longi; corollae tubus 2.5 cm. longus, lobi oblongo elliptici 5.5 cm. longi 1.4 cm. lati; labellum 6 cm. longum latissimum apice 3-lobatum crispatum; stamen 5 cm. longum filamentum late oblongum apice minute dentatum, anthera 0.9 cm. longa vix supra medium affixa. Capsula ignota.

Type, *Smith 2869*, collected Jan. 11, 1938, in dense forest along Shodikar Creek (Essequibo tributary), lat. about 1°18′N., and deposited in the herbarium of the Missouri Bot. Gard. (dupl. at N. Y. Bot Gard., etc.). This species, which resembles *C. erythrothyrsus* Loesn. of Peru in the general structure and aspect of the spike and leaves, differs from that species

[3] Alexander, E. J. Pontederiaceae. N. Am. Fl. **19**: 51–60. 1937.

* By R. E. Woodson.

and from all other American species known to me in its branching habit, the spikes terminating lateral branches 35–40 cm. long which bear open, tubular sheaths destitute of ligule or blade except at the tip, where an involucre of 2–4 reduced foliage leaves occurs. Dr. Smith states that the plant was freely branching and somewhat subscandent.

ORCHIDACEAE*

The orchids of the present collection consist of 72 numbers; 29 of these are unicate specimens and the remainder were collected at least in duplicate. The first set of duplicates is deposited in the Ames Herbarium, Botanical Museum, Harvard University. Notes concerning some of the more interesting or noteworthy of the collections are given here.

PLEUROTHALLIS CONSIMILIS Ames, Orch. **7**: 116. 1922.

Parabaru Savanna, on watershed between Rupununi and Kuyuwini Rivers, lat. about 2°10′N., *Smith 3043;* epiphyte in edge of forest. *P. consimilis*, originally described from Trinidad, has been previously collected in British Guiana by Jenman (*6940*) and im Thurn (*122*). The present specimens show some minor variations in the shape of the leaves and in the flowers.

PLEUROTHALLIS GROBYI Bateman ex Lindl. Bot. Reg. **21**: *t. 1797*.1835; Hook. Bot. Mag. **65**: *t. 3682*.1838; Lindl. Fol. Orch. Pleurothallis, 36.1859; Cogn. in Mart. Fl. Bras. **3** (4): 495.1896.

Pleurothallis picta Lindl. Bot. Reg. **21**: sub *t. 1797*.1835; Bot. Reg. **21**: *t. 1825*.1836.
Pleurothallis marginata Lindl. Bot. Reg. **24**: 42.1838; C. Schweinfurth, Bot. Mus. Leafl. Harv. Univ. **3**: 43.1934.
Pleurothallis surinamensis Focke in Tijds. Nat. Wetensch. **2**: 194.1849.
Pleurothallis choconiana S. Wats. Proc. Am. Acad. **23**: 285.1888.
Humboldtia Grobyi Kuntze, Rev. Gen. 667.1891.
Humboldtia picta Kuntze, Rev. Gen. 668.1891.
Humboldtia marginata Kuntze, Rev. Gen. 668.1891.
Pleurothallis pergracilis Rolfe, Kew Bull. **1893**: 334.1893.
Pleurothallis panamensis Schlecht. Rep. Sp. Nov. **17**: 140.1921.

Basin of Shodikar Creek (Essequibo tributary), lat. about 1°18′N., *Smith 2889;* epiphyte in dense forest; perianth pale yellow to straw-colored. *P. Grobyi* is known from Mexico, British Honduras, Guatemala, Honduras, Costa Rica, Panama, the West Indies, British and Dutch Guiana, and Brazil. The species is quite variable, but florally it is quite impossible to distinguish any of the synonyms which are brought together above. The leaves vary from nearly orbicular to spathulate. It is not improbable that there are other synonyms which should be referred to *P. Grobyi*.

* By Louis O. Williams

EPIDENDRUM COOPERIANUM Bateman, Bot. Mag. **93**: *t. 5654*.1867; Cogn. in Mart. Fl. Bras. **3**(5): 96.1898; Cogn. Dict. Icon. Orch. Epidendrum *t. 8*.1898.

Western extremity of Kanuku Mountains, in drainage of Takutu River, alt. 700 m., *Smith 3312;* perianth segments cream-white. *E. Cooperianum* is new to British Guiana; the present collection is the first wild specimen which has been sent to the Ames Herbarium.

CYRTOPODIUM CRISTATUM Lindl. Bot. Reg. **27**: sub *t. 8*.1841; Ames, Orch. **7**: 54. *t. 113*.1922.

Parabaru Savanna, on watershed between Rupununi and Kuyuwini Rivers, lat. about 2°10′N., *Smith 3074, 3075;* terrestrial. Savanna between Takutu River and Kanuku Mountains, *Smith 3231;* terrestrial. *C. cristatum* has not been collected often, although the collector reports that it is abundant on the Rupununi-Takutu savannas. The cited specimens exhibit both fruits and flowers and constitute excellent records of a species which is rare in herbaria.

BOLLEA VIOLACEA (Lindl.) Reichb. f. Bot. Zeit. **10**: 668.1852; Xen. Orch. **1**: 187. *t. 66, f. III, 6–9*.1856.

Huntleya violacea Lindl. Bot. Reg. **25**: Misc. 19.1839; Sert. Orch. *t. 26*.1839.

Parabaru Savanna, on watershed between Rupununi and Kuyuwini Rivers, lat. about 2°10′N., *Smith 3038;* epiphyte in edge of forest. *B. violacea*, although fairly well known, is not too well represented in herbaria. This may be due in no small part to the fact that the flowers are fleshy and difficult to press and dry. Lindley (Sert. Orch.) describes the color of the flowers as "soft yet intense violet, which varies from the depth of the richest sapphire to the mild iridescence of opal."

MAXILLARIA PAUCIFLORA Barb. Rodr. Gen. & Sp. Orch. Nov. **1**: 116.1877; Cogn. in Mart. Fl. Bras. **3**(6): 16. *t. 2*.1904.

Basin of Essequibo River, near mouth of Onoro Creek, lat. about 1°35′ N., *Smith 2697;* epiphyte in dense forest along river. *M. pauciflora* is a rare species which is new to British Guiana.

TRIGONIDIUM TENUE Lodd. ex Lindl. Bot. Reg. **25**: Misc. 44.1839; Cogn. in Mart. Fl. Bras. **3**(6): 102.1904.

Basin of Kuyuwini River (Essequibo tributary) about 150 miles from mouth, *Smith 2590;* epiphyte in dense forest along river. Excellent specimens of a species which has not been collected often.

ONCIDIUM CEBOLLETA Sw. Sv. Vet.-Akad. Nya Handl. **21**: 240.1800; Hook. Bot. Mag. **64**: *t. 3568*.1837; Cogn. in Mart. Fl. Bras. **3**(6): 438.1906.

Western extremity of Kanuku Mountains in drainage of Takutu River,

alt. 200 m., *Smith 3319;* epiphyte in dense forest. *O. cebolleta*, while not uncommon in South America, seems not to have been previously reported from British Guiana.

PIPERACEAE

The family is represented in the present collection by 26 numbers of *Piper* and 12 of *Peperomia*. Two species of *Piper (2826, 2827)*, collected in the upper Essequibo region, are said to be used in the preparation of arrow-poison by the Wai-wai Indians.

MORACEAE*

Ficus Albert-Smithii Standl., sp. nov.

Arbuscula 2–4-metralis, ramulis crassis griseis, novellis ut videtur dense breviter patenti-hirtellis, internodiis brevibus; stipulae triangulari-oblongae 12 mm. longae attenuato-acuminatae crassae deciduae dorso ferrugineo-puberulae vel glabratae; folia mediocria petiolata crasse coriacea, petiolo crasso 1–2 cm. longo glabrato; lamina oblonga vel auguste oblonga vulgo supra medium paullo latior, 9–13 cm. longa 3.5–5.5 cm. lata, apice rotundata vel obtusissima atque interdum breviter obtuse acutata, basi anguste rotundata atque breviter emarginata, supra glaberrima viridis lucida, costa gracili manifesta, nervis venisque non elevatis obscuris, subtus primo ubique dense minute adpresse ferrugineo-tomentosa, serius glabrata, costa crassiuscula valde elevata, nervis lateralibus utroque latere ca. 10 elevatis angulo lato adscendentibus elevatis leviter arcuatis vel fere rectis prope marginem in nervum collectivum irregularem conjunctis, nervulis prominulis leviter prominentibus; receptacula geminata globosa vel paullo depressa 7 mm. diam. densissime ferrugineo-tomentella vel glabrata, ostiolo fere plano, involucro bilobo, lobis subadpressis apice rotundatis 3–4 mm. longis, pedunculo 1–2 mm. longo crasso.

Type, *Smith 3651*, collected Apr. 22, 1938, on open rocky summit of Mount Iramaikpang, northwestern portion of Kanuku Mountains, alt. 975 m., and deposited in the herbarium of the Field Museum. A gnarled tree 2–4 m. high, noteworthy for the dense and close rusty tomentum investing the lower leaf-surface and the receptacles, at least in the young state.

Ficus kanukuensis Standl., sp. nov.

Arbor 20-metralis omnino glabra, ramulis crassiusculis brunneo-ferrugineis lenticellis manifestis parvis albidis conspersis, internodiis brevibus; stipulae lanceolatae attenuatae 6–7 mm. longae caducae erectae; folia parva breviter petiolata coriacea, petiolo crassiusculo 6–8 mm. longo; lamina elliptica vel late elliptica 3.5–6.5 cm. longa 2.5–3 cm. lata acuta vel subabrupte breviter acuminata, acumine ipso obtuso, basi obtusa vel ro-

* By P. C. Standley.

tundata, supra subopaca subdense minute albido-puncticulata, costa nervisque vix elevatis sed manifestis, subtus fere concolor, e basi 3–5-nervia, costa gracili elevata, nervis lateralibus utroque latere ca. 5 angulo semirecto vel paullo latiore adscendentibus subarcuatis prominentibus, nervulis prominulis arcte reticulatis; pedunculi geminati crassiusculi 4–6 mm. longi; receptacula globosa ca. 5 mm. diam. glabra, ostiolo profunde depresso; involucrum breviter bilobum adpressum, lobis apice late rotundatis vix 1.5 mm. longis.

Type, *Smith 3143*, collected Mar. 7, 1938, in dense forest near western extremity of Kanuku Mountains, in drainage of Takutu River, alt. 300 m., and deposited in the herbarium of the Field Museum.

Pourouma essequiboensis Standl., sp. nov.

Arbor 20-metralis, ramulis novellis crassis sparse minute adpresse albido-pilosis cito glabratis, internodiis brevissimis; stipulae caducae oblongae ca. 6 cm. longae atque 1.5 cm. latae acuminatae crassae extus dense araneoso-tomentosae; folia longipetiolata tenuiter coriacea, petiolo ca. 10 cm. longo araneoso-tomentoso vel glabrato; lamina 20–27 cm. longa atque aequilata vel latior profunde trilobata, basi profunde cordata, sinu basali clauso, lobis basalibus late rotundatis, lobo centrali oblongo-elliptico acuto atque breviter acuminato undulato, nervis lateralibus utroque latere ca. 21 angulo suberecto adscendentibus rectis prominentibus, lobis lateralibus conformibus sed paullo asymmetricis, lamina supra ad costam pilis longis fulvis subadpressis pilosa, subtus ubique dense adpresse araneoso-tomentosa; inflorescentia mascula ca. 7.5 cm. longa sessilis e basi ramosa repetite dichotoma sublaxa multiflora, ramis dense araneoso-tomentosis, floribus breviter vel longius pedicellatis.

Type, *Smith 2731*, collected Dec. 18, 1937, in dense forest on high land, basin of Essequibo River, near mouth of Onoro Creek, lat. about 1°35′ N., and deposited in the herbarium of the Field Museum. Similar to this species is *Pourouma cuspidata* Warb., of the Rio Juruá, Brazil, but that has decidedly different pubescence, brownish rather than white, and the leaf-lobes are conspicuously linear-cuspidate.

LORANTHACEAE

Phthirusa coarctata A. C. Smith, sp. nov.

Frutex parasiticus; ramulis teretibus (juventute complanatis) fusco-squamuloso-furfuraceis demum glabrescentibus, internodiis 2–4 cm. longis; petiolis furfuraceis gracilibus 3–7 mm. longis; foliis suboppositis coriaceis opacis elliptico-oblongis, 3–4 cm. longis, 1.5–3.5 cm. latis, basi acutis vel subattenuatis, apice rotundatis saepe mucronulatis vel emarginatis, pinnatinerviis, costa subtus prominente, nervis secundariis utroque 3–5 adscendentibus utrinque leviter elevatis; spicis masculis (solis visis) ut

ramulis furfuraceis, in axillis solitariis vel binis, ad 14 mm. longis, breviter (ad 2 mm.) stipitatis; ternationibus perfecte sessilibus 4-seriatis, 5–8 per seriem; bracteis late deltoideis calloso-apiculatis, primariis circiter 1.5 mm. longis, secundariis minoribus; floribus flavis glabris; calyce minute 4-denticulato circiter 1 mm. longo; petalis 4, alternis oblongo-spathulatis, 2 mm. longis, 1 mm. latis, apice rotundatis, alternis oblongis, 1.7 mm. longis, 0.8 mm. latis, apice acutis; filamentis crassis brevibus, 0.3 mm. longis vel minoribus, prope petalorum medium insertis; antheris transverse oblongis, 0.4–0.5 mm. longis, 0.7–0.8 mm. latis, obtusis; stylo clavato circiter 1 mm. longo.

Type, *Smith 2204*, collected Oct. 9, 1937, in scrub savanna at Karenambo, lat. about 3°45′N., basin of Rupununi River. A member of the section *Euphthirusa* Engl., the new species is readily distinguished by its crowded 4-ranked flower-clusters. It seems to be related to *P. santaremensis* Eichl. (a species with larger leaves, longer spikes, and well-spaced flower-clusters) and *P. guyanensis* Eichl. (a species with narrower leaves and fewer and less crowded flower-clusters).

OLACACEAE

HEISTERIA SCANDENS Ducke

Basin of Shodikar Creek (Essequibo tributary), lat. about 1°18′N., in dense forest on low land, *Smith 2862*. Previously known only from Amazonian Brazil.

POLYGONACEAE*

Coccoloba charitostachya Standl., sp. nov.

Arbor gracilis 5-metralis, ramis crassiusculis fusco-ochraceis teretibus rimosis, novellis minute puberulis, internodiis brevibus; ochreae laxae 5–7 mm. longae ferrugineae sparse hirtellae et puberulae vel glabratae subpersistentes; folia inter minora breviter petiolata subcoriacea, petiolo 4–8 mm. longo minutissime puberulo vel fere glabro; lamina elliptico-ovalis vel obovato-ovalis 6–8 cm. longa 3.8–5.5 cm. lata, apice rotundata atque interdum leviter emarginata, basi anguste rotundata emarginata vel breviter cordata, supra viridis sublucida glaberrima, costa nervisque subimpressis, subtus paullo pallidior glabra vel ad costam gracilem elevatam minute puberula, nervis lateralibus utroque latere ca. 6 angulo semirecto adscendentibus leviter arcuatis prope marginem arcuato-conjunctis, venis promnulis laxe reticulatis; racemi terminales numerosi subdense multiflori graciles atque flexuosi breviter pedunculati plerumque 7–15 cm. longi, rhachi sparse minute puberula vel fere glabra, pedicellis crassis vix 1 mm. longis; fructus in sicco ferrugineus globosus 3–4 mm. diam.

Type, *Smith 2356*, collected Nov. 2, 1937, on edge of forest near mouth of Charwair Creek, basin of Rupununi River, lat. about 2°35′N., and deposited in the herbarium of the Field Museum.

* By P. C. Standley.

Coccoloba savannarum Standl., sp. nov.

Arbor 7-metralis, ramis nigrescentibus rimosis teretibus, novellis brunnescentibus dense breviter patenti-hirsutis, internodiis brevibus; ochreae laxae ferrugineae 8–15 mm. longae breviter hirsutae; folia breviter petiolata coriacea, petiolo crasso 1–1.5 cm. longo densissime breviter fulvo-hirsuto; lamina suborbicularis vel rotundato-ovalis 7.5–12 cm. longa 6–10.5 cm. lata, apice late rotundata vel obtusissima, interdum leviter emarginata, basi late rotundata atque profunde (5–7 mm.) angusteque cordata, lobis basalibus rotundatis, supra opaca, ad costam plus minusve depressam breviter pilosa, aliter glabra, nervis venisque leviter immersis, subtus brunnescens, ubique puberula vel brevissime hirtella, serius glabrata, costa gracili elevata, nervis lateralibus utroque latere ca. 6 elevatis angulo semirecto vel latiore adscendentibus arcuatis prope marginem conjunctis, venis valde elevatis laxe reticulatis; racemi terminales simplices ca. 20 cm. longi atque 1 cm. lati subdensiflori breviter pedunculati, rhachi dense minute patenti-pilosula, floribus dense fasciculatis vix ultra 1 mm. longe pedicellatis, pedicellis pilosulis, ochreolis pedicellis aequilongis vel brevioribus; perianthii segmenta 2.5 mm. longa alte coalita apice rotundata extus dense puberula; stamina longe exserta, filamentis glabris.

Type, *Smith 2225*, collected Oct. 11, 1937, on scrub savanna near Karenambo, basin of Rupununi River, lat. about 3°45′ N., and deposited in the herbarium of the Field Museum.

NYCTAGINACEAE*

Torrubia Heimerliana Standl., sp. nov.

Arbuscula gracilis 3–4-metralis, ramulis griseo-ochraceis subteretibus minute puberulis, internodiis brevibus vel elongatis; folia valde inaequalia parva opposita vel ternata breviter petiolata rigide membranacea, petiolo gracili puberulo 3–6 mm. longo; lamina ovato-oblonga 3–5.5 cm. longa 1.5–2.5 cm. lata acuta vel breviter acuminata, basi valde inaequali obtusa vel subacuta, supra in sicco subfusca opaca sparse minute praesertim ad costam puberula vel glabrata, costa prominula, subtus fere concolor primo ubique sparse minute scaberulo-puberula cito glabrata, costa gracili elevata, nervis lateralibus utroque latere 6 7 angulo semirecto adscendentibus irregularibus rectis vel subcurvis remote a margine conjunctis prominulis, venulis prominulis laxe reticulatis; inflorescentiae (juveniles ante anthesin tantum visae) parvae terminales ubique dense ferrugineo-tomentellae ca. 8 mm. longe pedunculatae vix ad 1 cm. longae dense pauciflorae, floribus sessilibus vel brevissime pedicellatis.

Type, *Smith 3146*, collected Mar. 7, 1938, in dense forest near western extremity of Kanuku Mountains, in drainage of Takutu River, alt. 300 m., and deposited in the herbarium of the Field Museum. The species is dedi-

* By P. C. Standley.

cated to Dr. Anton Heimerl, capable student of the family, to whom the writer is indebted for many courtesies. The inflorescences are so immature that nothing can be stated definitely of the flower structure, but there is every reason for believing that a well marked species is involved, notable among the representatives of the genus in northern South America for its unusually small leaves.

Torrubia kanukuensis Standl., sp. nov.

Arbor 20–25-metralis, ramulis crassiusculis teretibus in sicco fuscis, novellis praesertim ad nodos dense minute ferrugineo-tomentellis, internodiis brevibus vel saepissime elongatis; folia majuscula opposita vel ternata sat longe petiolata crasse membranacea, petiolo gracili 2–4 cm. longo sparse ferrugineo-puberulo vel fere glabro; lamina late oblonga usque oblongo-elliptica 7.5–18 cm. longa 4–8 cm. lata acutata, acumine ipso obtuso, basi saepe inaequali subrotundata ad acuta, supra in sicco fuscescens subopaca, costa prominente, nervis manifestis sed vix elevatis, glabra, subtus fere concolor in statu adulto glabra sed primo ut videtur sparse minute saltem prope basin puberula, costa gracili elevata, nervis lateralibus utroque latere ca. 10 angulo latiore quam recto adscendentibus arcuatis prominulis, venis obscuris laxe reticulatis; inflorescentia terminalis longissime pedunculata cymoso-paniculata 4–6 cm. longa 5–12 cm. lata e basi 2–4-radiata subdense multiflora, pedunculo 7–10.5 cm. longo sparse ferrugineo-puberulo vel fere glabro, ramis adscendentibus vel subdivaricatis plus minusve corymbiformiter dispositis dense minute brunneo-puberulis, floribus in cymulas parvas paucifloras dispositis sessilibus vel brevissime pedicellatis, bracteolis minutis; perianthium femineum tubulosum 3.5 mm. longum extus dense brunneo-tomentellum, dentibus brevissimis, stylo breviter exserto.

Type, *Smith 3594*, collected Apr. 16, 1938, in dense forest on northwestern slopes of Kanuku Mountains, in drainage of Moku-moku Creek (Takutu tributary), alt. 150–200 m., and deposited in the herbarium of the Field Museum. Another collection from the same locality is *Smith 3486*.

MENISPERMACEAE

Sciadotenia cayennensis Benth.

Northwestern slopes of Kanuku Mountains, in drainage of Moku-moku Creek, dense forest, alt. 300–400 m., *Smith 3581*. New to British Guiana; previously reported[4] from Surinam, French Guiana, and Amazonian Brazil.

[4] Krukoff, B. A., and Moldenke, H. N. Studies of American Menispermaceae, with special reference to species used in preparation of arrow-poisons. Brittonia 3: 1–74. 1938.

ANNONACEAE*

GUATTERIA MAYPURENSIS H. B. K.

Basin of Rupununi River, lat. 2°10′N. and 2°20′N., on edge of forest, *Smith 2452, 3055*. New to British Guiana. A new species of *Guatteria*, based in part on Dr. Smith's collections, will be described in a forthcoming treatment of the genus.

ANAXAGOREA BREVIPES Benth.

Basin of upper Essequibo River and its tributaries, Kuyuwini River and Shodikar Creek, in dense forest, *Smith 2550, 2735, 2867*. Apparently new to British Guiana.

Anaxagorea petiolata R. E. Fries, sp. nov.

Arbor gracilis 8 m. alta; ramuli juniores glabri graciles. Foliorum petiolus verus 15–20 mm. longus, 1.5–2 mm. crassus, teres, glaber sed rugosus, nigrescens, supra angustissime canaliculatus; lamina membranacea, exsiccata subtus paulo pallidior, supra glabra et laevis, nitida, subtus pilis stellatis minimis rufis parcissimis (demum omnino deciduis?) obsita ceterumque glabra, elliptica vel oblongo-elliptica, ad vel paulo supra medium latissima, apice sensim obtuseque acuta vel in cuspidem brevem sat abrupte contracta, basi rotundato-acuta et ca. 5 mm. longe alis angustis decurrens, qua re petiolus longior apparet, 15–21 cm. longa et 5–7.5 cm. lata; costa supra subplana vel levissime impressa, subtus elevata teres; nervi laterales I. ca. 12 utrinque, graciles, angulo ca. 80° exeuntes, sat recti et arcubus 3–5 mm. a margine distantibus regulariter conjuncti, supra plani et parum conspicui, subtus prominuli; venulae supra non vel parum conspicuae, subtus prominulae, reticulum laxissimum formantes. Flores non visi. Fructus nonnulli in trunco glomerati; pedicelli ca. 2 cm. longi, graciles, sursum incrassati, rufo-puberuli, ad trientem superiorem cicatrice annuliformi bracteae caducae instructi; monocarpia una cum stipite gracili ca. 2.5 cm. longo 3–3.5 cm. attingentia, apice minute apiculata, pilis stellatis minimis dense rufo-puberula. Semina (immatura) falciformia, straminea, 16–17 mm. longa.

Type, *Smith 3192*, collected Mar. 10, 1938, in dense forest near western extremity of Kanuku Mountains, in drainage of Takutu River, alt. 600 m., and deposited in the author's herbarium in Stockholm. This species is distinguished by the thin large leaves with exceptionally long straight petioles and by the long slender stipes of the monocarps; it is also cauliflorous.

UNONOPSIS GUATTERIOIDES (A. DC.) R. E. Fries

Basin of Kuyuwini River (Essequibo tributary), about 150 miles from mouth, in dense forest along river, *Smith 2594*. New to British Guiana.

* By R. E. Fries.

Hornschuchia caudata R. E. Fries, sp. nov.

Arbor gracilis 10 m. alta; ramuli novelli pilis flavescentibus brevibus mollibus patulis dense vestiti, glabrescentes; internodia 1–1.5 cm. longa. Foliorum petiolus 2–3 mm. longus, gracilis; lamina membranacea, saturate viridis, concolor, supra ab initio glaberrima, subtus primo sericea, demum omnino glabrescens, lanceolato-oblonga, ca. ad medium vel paulo infra medium latissima, longissime et angustissime subsensim caudata, basi brevius acuta decurrens, (5–)8–13 cm. longa, (1–)2.5–3.5 cm. lata; costa supra conspicue impressa; nervi laterales graciles (inferiores valde) adscendentes, 2–3 mm. intra marginem sat irregulariter conjuncti, cum reticulo denso utroque latere prominuli. Flores supra axillam ca. ad medium internodii exeuntes; pedicelli basi articulati, ebracteati, vulgo curvati, breviter denseque hirsuti, 3–6 mm. longi. Sepala fere omnino in discum triangularem 2.5–3 mm. latum extus sericeum intusque glabrum coalita. Petala exteriora ovalia, extus tomentella, intus minute puberula, 5–6 mm. longa et 3–3.5 mm. lata; petala interiora paulo minora et laxius hirsuta. Stamina filamentis 0.5–1 mm. longis inclusis 2.5–3 mm. metientia; appendix connectivi rectangularis vel deltoidea, 0.3–0.5 mm. longa; antherae locellatae. Ovaria ovoidea, dense sericea. Monocarpia (unicum visum) globosa, extus olivacea-tomentella; semina 5 (vel pluria?), 18–20 mm. longa, castanea.

Type, *Smith 2130*, collected Sept. 27, 1937, in dense forest at Haiowa Falls, Essequibo River, lat. about 5°10′ N., and deposited in the author's herbarium in Stockholm. Closely related to *H. guianensis* R. E. Fries (see Acta Hort. Berg. **12**: 264.1937), but distinguished by narrower leaves with very long and caudate apices and by white glabrous upper leaf-surfaces; in our species the pedicels are much shorter and the flowers smaller than those of *H. guianensis*.

Annona Ambotay Aubl.

Basin of Kuyuwini River (Essequibo tributary), about 150 miles from mouth, in dense forest, *Smith 2542;* northern slope of Akarai Mountains in drainage of Shodikar Creek (Essequibo tributary), alt. 500 m., in dense forest, *Smith 2922*. Apparently new to the colony.

Annona Ulei R. E. Fries

Basin of Rupununi River, Isherton, lat. about 2°20′N., in savanna thickets, *Smith 2508*. New to British Guiana.

Fusaea longifolia (Aubl.) Saff.

Basin of Essequibo River, near mouth of Onoro Creek, lat. about 1°35′ N., in dense forest on high land, *Smith 2779*. New to British Guiana.

HERNANDIACEAE

Sparattanthelium Macusiorum A. C. Smith, sp. nov.

Frutex ut videtur subscandens; ramulis teretibus striatis, juventute dense villosis (pilis cinereo-albidis 0.5–0.7 mm. longis), demum glabrescentibus nigrescentibus; petiolis gracilibus leviter canaliculatis ut ramulis novellis dense villosis 8–27 mm. longis; laminis chartaceis plerumque obovato-oblongis vel elliptico-oblongis, magnitudine valde diversis, 4.5–12 cm. longis, 2–5.5 cm. latis, basi rotundatis vel late obtusis, apice breviter acuminatis vel cuspidatis (acumine 3–10 mm. longo), margine integris et saepe paullo revolutis, basi trinerviis (nervis primariis ceteris lateralibus utroque plerumque 2 e costa supra medium exorientibus, nervis supra elevatis vel subplanis subtus valde elevatis, venulis reticulatis obscuris vel subtus prominulis), supra siccitate olivaceo-nigrescentibus praeter nervos venulasque pilosulas glabratis, subtus pallidioribus regulariter et persistente cinereo-albido-pilosis (pilis densissimis crispatis circiter 0.5 mm. longis); inflorescentiis floriferis desideratis; inflorescentiis fructiferis argenteo-candidis nodosis copiose dichotome ramulosis, ramulis gracilibus minute pilosis glabrescentibus, 15–25 cm. longis; fructibus glabris rugulosis minute nigro-punctatis inconspicue costatis oblongo-ellipsoideis, 12–15 mm. longis, 4–6 mm. diametro, vertice reliquiis floralibus ad 1 mm. longis coronatis.

Type, *Smith 3390*, collected Mar. 31, 1938, on exposed rocky ledges on northwestern slopes of Kanuku Mountains, in drainage of Moku-moku Creek (Takutu River tributary), alt. about 200 m. It is a species readily characterized by the persistent and comparatively long tomentum of its lower leaf-surfaces, apparently most closely related to *S. Botocudorum* Mart. and *S. guianense* Sandwith. Although the young leaves of these species may be closely pilose beneath, the hairs appear to be less than 0.2 mm. long and soon deciduous. The very slender branches of the fruiting inflorescences of the new species are also characteristic. In keeping with Martius' precedent, the specific name of the new plant refers to the Macusis, an Indian tribe inhabiting the Kanuku region.

ROSACEAE*

Licania arachnites Standl., sp. nov.

Arbor gracilis 10-metralis, ramulis gracilibus subflexuosis, vetustioribus fuscis vel cinereis, novellis fusco-ferrugineis laxe adpresso-pilosis; stipulae lineari-attenuatae deciduae ca. 4–5 mm. longae adpresso-pilosae; folia parva brevissime petiolata tenuiter coriacea, petiolo crassiusculo ca. 3 mm. longo piloso; lamina ovalis ad late elliptico-ovalis 4.5–6 cm. longa 2.3–3.5 cm. lata, apice rotundata vel obtusa, basi obtusa vel breviter cuneato-

* By P. C. Standley.

acuta, supra in sicco lucida, glabra vel ad costam prope basin sparse adpresso-pilosa, costa gracillima prominente, nervis venisque prominulis, subtus pallida ubique tomento albido adpresso sed laxo araneoso obtecta, costa gracili elevata, nervis lateralibus utroque latere ca. 8 arcuatis prominulis angulo paullo latiore quam recto adscendentibus; flores parvi racemoso-paniculati, interdum simpliciter racemosi, paniculis breviter pedunculatis ad 7 cm. longis et aequilatis, ramis gracilibus rectis pilis fulvidis subadpresse pilosis remotifloris, bracteis lanceolatis usque 3 mm. longis adpresso-pilosis, pedicellis brevissimis vel nullis; alabastra 1.3 mm. longa dense pilis fulvidis adpresso-pilosis, floribus apertis non visis.

Type, *Smith 2696*, collected Dec. 17, 1937, in dense forest along Essequibo River, near mouth of Onoro Creek, lat. about 1°35′N., and deposited in the herbarium of the Field Museum.

Licania kanukuensis Standl., sp. nov.

Arbor 25-metralis, ramulis ferrugineo-nigrescentibus teretibus elevato-lenticellatis, novellis brunnescentibus dense tomentosis, internodiis brevibus; stipulae triangulares acuminatae ca. 2 mm. longae tomentosae; folia breviter petiolata coriacea, petiolo crasso 5–8 mm. longo dense tomentoso; lamina ovalis vel oblongo-ovalis 5.5–7 cm. longa 3–4.5 cm. lata, acuta vel breviter acuminata, rarius obtusa, basi obtusa ad rotundata, supra sublucida glabra, costa subimpressa, nervis obscuris, subtus sordido-grisea vel brunnescens, ubique tomento arcte adpresso denso obtecta, costa gracili elevata, nervis lateralibus utroque latere ca. 9 arcuatis angulo semirecto vel paullo latiore adscendentibus prope marginem arcuato-conjunctis, venulis prominentibus arcte reticulatis; inflorescentiae terminales racemoso-paniculatae foliis subaequales, ramis densissime pilis brevibus brunnescentibus patentibus pilosulis sublaxifloris, bracteis infimis interdum foliaceis, bracteis superioribus minutis ovatis dense tomentellis, floribus sessilibus vel subsessilibus; alabastra densissime breviter fulvo-pilosulis, floribus apertis non visis.

Type, *Smith 3420*, collected Apr. 1, 1938, in dense forest on northwestern slopes of Kanuku Mountains, in drainage of Moku-moku Creek (Takutu tributary), alt. 200–300 m., and deposited in the herbarium of the Field Museum.

Licania takutuensis Standl., sp. nov.

Arbor 8-metralis, ramulis teretibus nigrescentibus gracilibus, internodiis brevibus, novellis dense breviter pilis ochraceis subpatentibus pilosulis; folia mediocria brevissime petiolata coriacea, petiolo crasso 3–4 mm. longo dense minute pilosulo; lamina ovalis vel oblongo-ovalis 8–12.5 cm. longa 4.5–6.5 cm. lata, apice obtusa vel rotundata atque vulgo breviter subito acutata, apice ipso obtuso, basi interdum subobliqua rotundata vel obtusissima, supra lucida glabra, costa gracillima prominente, nervis venis-

que obsoletis, subtus concolor ubique inter venulas adpresso-tomentulosa, in juventute ut videtur dense arachnoideo-tomentosa, costa gracili elevata, nervis lateralibus utroque latere ca. 9 angulo latiusculo adscendentibus subarcuatis gracilibus prope marginem laxe conjunctis, venulis prominulis arctissime reticulatis; inflorescentiae terminales et axillares, folia aequantes vel eis duplo longiores, racemis laxifloris usque 7 cm. longis, rhachi dense breviter flavido-pilosula, bracteis linearibus ad 6 mm. longis, pedicellis brevissimis; calyx 2 mm. longus extus dense minute fulvido-tomentellus basi rotundatus, lobis triangulari-oblongis tubum aequantibus obtusis; stamina 5–6 mm. longa, filamentis glabris.

Type, *Smith 3302*, collected Mar. 17, 1938, in dense forest near western extremity of Kanuku Mountains, in drainage of Takutu River, alt. 700 m., and deposited in the herbarium of the Field Museum.

Parinarium lucidissimum Standl., sp. nov.

Arbor 40-metralis, trunco 1.5 m. diam., ramulis crassis teretibus nigrescentibus, novellis crassis densissime pilis longis adscendentibus brunneis hirsutis, internodiis brevibus; stipulae extus dense brunneo-hirsutae usque 3 cm. longae; folia breviter petiolata crasse coriacea, petiolo crasso 5–6 mm. longo brunneo-hirsuto infra apicem glandulis 2 depressis brunneis orbicularibus onusto; lamina elliptica vel oblongo-elliptica 7–9 cm. longa 3–4 cm. lata subabrupte acuminata, acumine ipso obtuso, basi obtusa, supra lucidissima fere glabra, ad costam profunde impressam puberula, nervis quoque impressis, subtus albida vel ochracea ubique dense tomento adpresso obtecta, sparse inter tomentum adpresso-hirsuta, costa crassa elevata, nervis lateralibus utroque latere 20 et ultra elevatis angulo semirecto vel latiore adscendentibus fere rectis in marginem desinentibus, venulis transversis prominulis arcte reticulatis; fructus sessilis vel breviter pedunculatus ovalis ca. 4.5 cm. longus atque 3 cm. latus, apice obtusus vel subrotundatus, basi obtusus vel rotundatus.

Type, *Smith 3320*, collected Mar. 19, 1938, in dense forest near western extremity of Kanuku Mountains, in drainage of Takutu River, alt. 200 m., and deposited in the herbarium of the Field Museum. A tree with buttressed trunk; the small unusually lustrous leaves are exceptionally thick and rigid.

MIMOSACEAE*

PARKIA GIGANTOCARPA Ducke

Basin of Shodikar Creek (Essequibo tributary), lat. about 1°18′N., in dense forest, *Smith 3021*. The first record for British Guiana, the next nearest recorded locality being on the lower Rio Trombetas in Amazonian Brazil.

* By N. Y. Sandwith.

CALLIANDRA GLOMERULATA Karst.

Western extremity of Kanuku Mountains, in drainage of Takutu River, in dry tangled forest, alt. 300–500 m., *Smith 3156*. New to British Guiana; otherwise known from Colombia and Venezuela.

PITHECELLOBIUM RACEMOSUM Ducke

Basin of Essequibo River, near mouth of Onoro Creek, lat. about 1°35′ N., on high land in dense forest, *Smith 2721*. New to British Guiana; previously known from French Guiana and Amazonian Brazil. According to Ducke, this tree provides an excellent hardwood, the best and most attractive of the woods of the Mimosaceae of the State of Para.

ENTEROLOBIUM CYCLOCARPUM (Jacq.) Griseb.

Western extremity of Kanuku Mountains, in drainage of Takutu River, in dense forest, alt. 200 m., *Smith 3235*. Apparently the first record for British Guiana; previously known from Central America, West Indies, Colombia, and Venezuela.

INGA BREVIPES Benth.

Western extremity of Kanuku Mountains, in drainage of Takutu River, in dense forest, alt. 700 m., *Smith 3310;* filaments white. Presumably endemic, previously collected only by Robert Schomburgk (*740*), whose manuscript notes preserved at Kew indicate that his plant was forwarded from Pirara in June, 1838. Although Pirara is a savanna settlement, it was Schomburgk's base during much of his work in the Kanukus. The present specimen agrees well with the type (a single branchlet), but the leaflets are 3-jugate, not 2-jugate, and Schomburgk described the stamens as dark vermilion.

INGA STRIGILLOSA Spruce; Benth.

Basin of Rupununi River, dense forest 4 miles south of Isherton, lat. about 2°20′ N., *Smith 2480*. New to British Guiana; previously known from Amazonian Brazil and Peru.

CAESALPINIACEAE*

Dialium guianense (Aubl.) Sandwith, comb. nov.

Arouna guianensis Aubl. Hist. Pl. Guian. **1**: 16. *pl.* 5.1775. Non *Dialium "guianense"* Willd.; Steud. Nom. ed. 2. **1**: 497.1840, sphalm. pro *D. guineënsi* Willd.
Arouna divaricata Willd. Sp. Pl. **1**: 156.1798.
Dialium divaricatum Vahl, Enum. **1**: 303.1805.

Basin of Essequibo River, near mouth of Onoro Creek, lat. about 1°35′ N., dense forest, *Smith 2811*. Guatemala to Panama; Colombia to Guiana and Brazil. Previously recorded from British Guiana (Rich. Schomb. Reisen **3**: 1036.1848), but there is no specimen at Kew.

Recent authors (Standley, Fl. Costa Rica; Britton and Killip, Mimo-

* By N. Y. Sandwith.

saceae and Caesalpiniaceae of Colombia), discovering that Aublet's trivial was the earliest for this species, have erred in using—and attributing to Steudel—a binomial found in Steudel's "Nomenclator" in which the trivial *guianense* was printed, owing to a *lapsus calami*, instead of *guineënse*. Steudel attributed the authorship to Willdenow, and it is obvious that by *D. guianense* Willd. he meant to indicate *D. guineënse* Willd. of tropical Africa. A new combination appears, therefore, to be required for Aublet's trivial in the genus *Dialium*.

BAUHINIA SURINAMENSIS Amshoff, "On South American Papilionaceae," 20.1939, ex descr. et char.

Western extremity of Kanuku Mountains, in drainage of Takutu River, dense forest, alt. 500 m., *Smith 3175*. First record for British Guiana; otherwise known from Surinam.

PALOUE INDUTA Sandwith

Basin of Essequibo River, near mouth of Onoro Creek, lat. about 1°35′ N., dense forest along river, *Smith 2652*. Known only from one previous collection from a small riparian bush from essentially the same locality.

Macrolobium Jenmani (Gleason) Sandwith, comb. nov.

Vouapa Jenmani Gleason, Bull. Torrey Club **54**: 609.1927.

Known only from British Guiana.

PAPILIONACEAE*

LONCHOCARPUS ERNESTI Harms

Western extremity of Kanuku Mountains, in drainage of Takutu River, dense forest, alt. 200 m., *Smith 3225*. First record for British Guiana; our specimen agrees perfectly with the type collection, *Ule 8167*, from the neighboring district of the Rio Branco. The species is very closely allied to *L. hedyosmus* Miq. of Surinam, Amazonian Brazil, and Peru (see Amshoff, "On South American Papilionaceae," 58.1939).

FISSICALYX sp.

Western extremity of Kanuku Mountains, in drainage of Takutu River, alt. 150 m., in dense forest, *Smith 3082*. Fairly abundant locally, our specimen bearing flowers and fruits only. A remarkable discovery of a monotypic genus hitherto recorded only from Venezuela. The orange flowers and the fruits agree well with those of *F. Fendleri* Benth. from between Turmero and Maracay, near "Colonia Tovar," but the specific identity is uncertain in the absence of leaves. The genus is outstanding on account of both the spathaceously split calyx and the anthers which open by two apical pores.

* By N. Y. Sandwith.

MYROXYLON PERUIFERUM L. f.

Northwestern slopes of Kanuku Mountains, in drainage of Moku-moku Creek (Takutu tributary), dense forest, alt. 200–300 m., *Smith 3533*. Brazil Colombia, Ecuador, Peru, and Bolivia. Previously collected in the region of the present collection (see Kew Bull. **1933**: 332.1933), but without fruits and seeds, which now enable the material to be determined specifically.

ZOLLERNIA sp.

Western and northwestern slopes of Kanuku Mountains, in drainage of Takutu River, in dense forest, alt. 200–600 m., *Smith 3144, 3203, 3465*. The first record of this genus from British Guiana. The species are ill-defined and, without further collecting and field and herbarium study of several of them, it is impossible to decide which are valid diagnostic characters. The present material may represent forms of either *Z. paraënsis* Hub. or *Z. Ulei* Harms, which may themselves be conspecific; it is not itself uniform, since *3144* has differently shaped and more coriaceous leaves with a shorter petiole than *3203* and *3465*.

SWARTZIA LAURIFOLIA Benth.

Basin of Rupununi River, Isherton, lat. about 2°20′N., in forest, *Smith 2431*. New to British Guiana; collected in the neighboring Rio Branco District of Brazil by Ule (*7775*).

MELIACEAE

Trichilia compacta A. C. Smith, sp. nov.

Arbor 20–30 m. alta; ramulis teretibus fuscis juventute gracilibus minute puberulis mox glabrescentibus; foliis 15–30 cm. longis, petiolis rhachidibusque cinereo-puberulis mox glabris, supra leviter canaliculatis vel applanatis, petiolis 1.5–4 cm. longis, internodiis 1.5–3 cm. longis; foliolis 3- vel 4-jugis, petiolulis decidue puberulis 1–3 mm. longis, laminis plerumque alternatis firme chartaceis oblongis vel obovato-oblongis (basalibus saepe ovato-oblongis), (8–)11–15 cm. longis, (2.8–)3.5–6.5 cm. latis (basalibus saepe 3.5 cm. longis et 1.5 cm. latis), basi obtusis vel rotundatis (terminalibus saepe acutis), apice acuminatis (acumine 4–15 mm. longo apiculato), marginibus undulatis leviter recurvatis, supra praeter costam decidue puberulam glabris, subtus juventute inconspicue puberulis mox glabris, costa supra impressa subtus prominente, nervis secundariis utroque 10–13 patulis supra leviter impressis vel subplanis subtus elevatis, venulis utrinque obscuris vel minute impressis vel prominulis; inflorescentiis parvis, floriferis circiter 2.5 cm. longis paucifloris, ramulis paucis brevissimis, bracteis late ovatis 1 mm. longis mox deciduis subtentis; inflorescentiae ramulis, pedicellis, calycibus, et petalis extra puberulo-strigosis (pilis albido-cinereis 0.2 0.3 mm. longis); pedicellis 2–3 mm. longis, brac-

teolis minutis deciduis; calyce sub anthesi 3.5 mm. lato, lobis 4 vel 5 patulis late deltoideo-ovatis, 0.7–1 mm. longis, 1.5–2 mm. latis, acutis; petalis 4 vel 5 subviridibus valvatis deltoideo-oblongis, circiter 3 mm. longis et 1.5 mm. latis, obtusis, intus glabris; filamentis glabris valde connatis 1.5 mm. longis, denticulis 0.4 mm. longis; antheris 8 (semper?) ovoideo-oblongis 1 mm. longis; ovario ovoideo-conico, sub anthesi circiter 2 mm. longo, pilis 0.3 mm. longis fusco-strigoso, stigmate subsessili capitato, ovulis collateralibus; inflorescentiis fructiferis (fructibus inclusis) 4–9 cm. longis, ubique persistenter puberulo-strigosis, pedicellis ad 3 mm. diametro incrassatis; fructibus maturis 1–4 per inflorescentiam fusco-rubicundulis obovoideo-oblongis, 25–30 mm. longis, 6–10 mm. latis, 3-valvatis, pericarpio 0.5 mm. crasso, endocarpio rubido, seminibus 1 vel 2, 12–15 mm. longis.

Type, *Smith 3545*, collected Apr. 11, 1938, in dense forest on northwestern slopes of Kanuku Mountains, in drainage of Moku-moku Creek, alt. 300–400 m. Another collection is *Smith 2898*, from dense forest on northern slopes of Akarai Mountains, in drainage of Shodikar Creek (Essequibo tributary), alt. 300 m., Jan. 15, 1938. Unfortunately, only one flowering inflorescence (on *3545*) could be obtained, so the above floral dimensions are not dependable. Both collections are in fruit.

A species of the Section *Moschoxylum*, *T. compacta* is related to species 59 76 in Casimir DeCandolle's well known monograph. In many characters, such as the strigose flowers, it resembles *T. propinqua* (Miq.) C. DC., but that species has sessile and somewhat narrower leaflets and a much larger and more freely branching inflorescence. In this group, the present species is noteworthy for its short compact inflorescence, which even in fruit does not much surpass the petiole in length. *T. silvatica* C. DC. and *T. Catigua* A. Juss., which come closer to *T. compacta* in inflorescence characters, differ from it in details of leaf-shape, size, and pubescence.

Trichilia Smithii C. DC.

Northwestern slopes of Kanuku Mountains, in drainage of Moku-moku Creek (Takutu tributary), dense forest, alt. 150–400 m., *Smith 3549, 3592*. It is a tree 12–20 m. high, fairly common locally along creeks at the base of the mountains, in both flower (*3592*) and fruit (*3549*) during April. The species has already been reported from this region (Sandwith, Kew Bull. **1933**: 328.1933), but apparently the fruit has not been described.

Fruiting pedicels to 10 mm. long, stout (2–3 mm. in diameter, swollen distally), obscurely lenticellate; capsule subglobose, to 23 mm. in diameter, glabrous, strongly verrucose, the pericarp 0.5–1 mm. thick, the seeds 3, 13–15 mm. long, 7–8 mm. broad.

Trichilia surumuensis C. DC.

Basin of Rupununi River, Isherton, edge of forest, *Smith 2462*. North-

western slopes of Kanuku Mountains, in drainage of Moku-moku Creek (Takutu tributary), dense forest, alt. 150–400 m., *Smith 3407, 3597*. A slender tree 4–5 m. high, in flower (*3407*) in April and in fruit (all numbers) in November or April. Although I have not seen type material of this species, the present collections fit the description and the Kanuku specimen cited by Sandwith (Kew Bull. **1933**: 328.1933). The fruit has not previously been described.

Fruiting pedicels 0.5–1.5 mm. long, glabrescent; capsule obovoid-oblong, 12–17 mm. long, 5–8 mm. broad, dull red or brown, closely puberulent, the pericarp about 0.2 mm. thick, the endocarp papery, bright red, the seeds 1 or 2, up to 10 mm. long.

Guarea pedicellata C. DC.

Basin of Essequibo River, near mouth of Onoro Creek, lat. about 1°35′ N., in dense forest on high land, *Smith 2715*. Northern slope of Akarai Mountains, in drainage of Shodikar Creek (Essequibo tributary), in dense forest, alt. 500 m., *Smith 2914*. New to British Guiana; otherwise known from basin of Rio Negro in Brazil.

MALPIGHIACEAE

Byrsonima Poeppigiana Juss.

Basin of Essequibo River, near mouth of Onoro Creek, lat. about 1°35′ N., in dense forest, *Smith 2691*. Although the collection is in fruit, it agrees perfectly with material cited by Niedenzu and seems to verify Sandwith's report (Kew Bull. **1937**: 102.1937) of the species from the same locality.

Byrsonima crassifolia (L.) H. B. K.

Savanna between Takutu River and Kanuku Mountains, *Smith 3344*. An abundant tree 3–8 m. high. The Macusi and Wapisiana Indians have a medical use for this widespread savanna tree. The inner bark is pounded into a pulp and applied, either as a poultice or as a liquid, to wounds and abrasions; it is said to promote healing both in humans and cattle.

VOCHYSIACEAE

Qualea albiflora Warm.

Basin of Essequibo River, near mouth of Onoro Creek, lat. about 1°35′ N., in dense forest on high land, *Smith 2709*. New to British Guiana.

Qualea Dinizii Ducke

Western extremity of Kanuku Mountains, in drainage of Takutu River, alt. 200 m., in dense forest, *Smith 3250*. New to British Guiana. Our material probably represents a variety which also occurs in Surinam, thus far unpublished.

ANACARDIACEAE

THYRSODIUM SCHOMBURGKIANUM Benth.

Western extremity of Kanuku Mountains, in drainage of Takutu River, dense forest, alt. 600 m., *Smith 3185;* a tree 8 meters high, with milky latex. This species is otherwise known from Amazonian Brazil; Sandwith (Kew Bull. **1932**: 211.1932) notes that the Schomburgk specimens were collected in the Rio Negro region and not in Guiana.

ASTRONIUM ULEI Mattick

Western extremity of Kanuku Mountains, in drainage of Takutu River, alt. 300 m., *Smith 3126;* northwestern slopes of Kanuku Mountains, in drainage of Moku-moku Creek (Takutu tributary), alt. 200–300 m., *Smith 3466*. Both specimens are in fruit and were found in dense forest. The species is otherwise known from the Rio Branco region of Brazil.

CELASTRACEAE

Maytenus planifolia A. C. Smith, sp. nov.

Arbor glabra ad 15 m. alta; ramulis cinereis gracilibus teretibus (juventute leviter angulatis); petiolis rugosis supra complanatis vel anguste alatis 4–8 mm. longis; laminis valde coriaceis utrinque planis siccitate olivaceis late oblongo-ellipticis, 5.5–8 cm. longis, 3–5 cm. latis, basi rotundatis vel obtusis et petiolo decurrentibus, apice rotundatis vel obtusis saepe leviter emarginatis, margine integris et leviter revolutis, costa utrinque elevata, nervis lateralibus utroque circiter 7 arcuato-adscendentibus utrinque immersis et obscuris; inflorescentiis axillaribus glomerulatis (vel interdum cum ramulo ad 7 mm. longo), bracteis minutis deltoideis; floribus sub anthesi 2–5 per inflorescentiam; pedicellis gracilibus (4–)6–7 mm. longis; calyce rotato, sepalis deltoideis, 0.7–0.9 mm. longis, apice callosodenticulatis et minute fusco-fimbriatis; petalis ovato-oblongis obtusis, 2–2.2 mm. longis, 1.7–2 mm. latis, saepe manifeste nervatis; filamentis gracilibus 1–1.4 mm. longis distaliter angustatis; antheris ellipsoideo-deltoideis circiter 0.5 mm. diametro; disco carnoso 2.2–2.5 mm. diametro; ovario in disco immerso 2-loculare, ovulis geminatis; stylo carnoso circiter 0.4 mm. longo obscure lobato; capsula immatura ellipsoidea.

Type, *Smith 3102*, collected Mar. 5, 1938, in dense forest at western extremity of Kanuku Mountains, in drainage of Takutu River, alt. 200 m.; petals and filaments yellowish green; anthers yellow. It is a species characterized by smooth leaves with obscure venation and, for the genus, good-sized flowers. From *M. amazonica* Mart., which appears to be its closest ally, the new species differs by its somewhat smaller leaves perfectly smooth above rather than with impressed nerves, by its slightly longer pedicels, and by its flowers being about twice as large.

Maytenus kanukuensis A. C. Smith, sp. nov.

Arbor glabra ad 25 m. alta; ramulis cinereis juventute angulatis gracilibus demum teretibus; petiolis rugosis supra canaliculatis superne anguste alatis 6–10 mm. longis; laminis coriaceis siccitate olivaceis anguste oblongo-ellipticis, 7.5–9.5 cm. longis, 2.5–3.5 cm. latis, basi acutis et petiolo decurrentibus, apice breviter acuminatis vel cuspidatis (acumine obtuso ad 7 mm. longo), margine leviter revolutis et superne obscure crenatis, costa utrinque prominente, nervis lateralibus utroque 8–11 adscendentibus prope margines anastomosantibus supra obscuris vel inconspicue elevatis subtus leviter prominulis, venulis obscuris vel subtus minute et obscure prominulis; inflorescentiis axillaribus glomerulatis; floribus sub anthesi 2–6 per inflorescentiam, bracteis minutis deltoideo-oblongis; pedicellis gracilibus 3–5 mm. longis; calyce rotato, sepalis deltoideis acutis 0.8–1 mm. longis, margine distaliter breviter fusco-fimbriatis; petalis oblongis obtusis, 2.3–2.7 mm. longis, circiter 1.3 mm. latis, margine obscure fimbriatis; filamentis gracilibus distaliter angustatis 1.3–1.8 mm. longis; antheris subglobosis vel transverse ellipsoideis circiter 0.5 mm. diametro; disco carnoso 2–2.5 mm. diametro; ovario in disco immerso, stylo carnoso 0.3–0.4 mm. longo obscure lobato; ovario 2-loculare, ovulis geminatis.

Type, *Smith 3444*, collected Apr. 5, 1938, in dense forest on northwestern slopes of Kanuku Mountains in drainage of Moku-moku Creek (Takutu tributary), alt. 200–300 m.; petals and filaments greenish. It seems to be allied, among Guiana and Amazonian species, only to *M. sapotiformis* Reiss., known to me only from description. The new species is distinguished by its longer petioles and somewhat smaller leaves with ascending and presumably more obvious lateral nerves. The flowers of *M. sapotiformis* seem to be undescribed.

HIPPOCRATEACEAE

Hippocratea Holdeniana A. C. Smith, sp. nov.

Frutex scandens ubique glaber; ramulis gracilibus teretibus juventute olivaceis mox cinereis lenticellatis; foliis oppositis, petiolis gracilibus leviter canaliculatis 7–11 mm. longis, laminis chartaceis siccitate fusco-olivaceis ellipticis vel obovato-ellipticis, 9–12 cm. longis, 3.5–6.5 cm. latis, basi attenuatis, apice breviter et obtuse cuspidatis, margine integris et leviter revolutis, costa utrinque prominente, nervis lateralibus utroque 4–6 adscendentibus utrinque elevatis, venulis copiose reticulatis utrinque prominulis; inflorescentiis axillaribus cymoso-paniculatis, rhachidibus rectis saepe ad 15 cm. longis, bracteis minutis vel foliis parvis similibus, ramulis lateralibus 1.5–3 cm. longis breviter (4–12 mm.) pedunculatis multidivisis; bracteolis oblongis mucronulatis 0.5–1 mm. longis; pedicellis sub anthesi 0.5–1 mm. longis, floribus expansis circiter 2 mm. diametro; sepalis orbiculari-ovatis, 0.7–0.9 mm. longis et latis, apice rotundatis, margine

scariosis et erosulis; petalis submembranaceis oblongis, 1.2–1.4 mm. longis, 0.8–1 mm. latis, dense glanduloso-punctatis vel lineolatis, apice rotundatis, margine integris; disco carnoso breviter tubuloso circiter 0.2 mm. alto; staminibus 3 erecto-patentibus, filamentis ligulatis membranaceis basin versus glanduloso-punctatis 0.3–0.4 mm. longis, antheris transversaliter oblongis circiter 0.2 mm. longis et 0.3 mm. latis, per rimas extrorsas horizontales dehiscentibus; ovario trigono-conico sub anthesi circiter 0.5 mm. diametro, profunde sulcato; loculis 3 staminibus alternatis circiter 4-ovulatis; stylo circiter 0.2 mm. longo truncato.

Type, *Smith 2630*, collected Nov. 26, 1937, in dense forest in basin of Kuyuwini River (Essequibo tributary), about 150 miles from mouth. It is apparently best placed in Peyritsch's Series *Cuerveae* (Mart. Fl. Bras. 11(1): 136.1878), where it has many characters in common with *H. aggregata* Peyr. It differs from that species by its shorter and proportionately broader leaf-blades with shorter petioles, its fewer inflorescences with smooth rather than verruculose branches, and its subsessile and much smaller flowers. *H. Holdeniana* is named for Dr. William Hall Holden, leader of the American Museum Terry-Holden Expedition, in recognition of his interest in scientific exploration.

Salacia Gleasoniana A. C. Smith, sp. nov.

Frutex scandens ubique glaber; ramulis teretibus fuscis vel apicem versus viridibus interdum lenticellatis; foliis oppositis, petiolis supra canaliculatis 7–11 mm. longis, laminis subcoriaceis siccitate utrinque viridibus elliptico-oblongis, 7–9 cm. longis, 3–4 cm. latis, basi acutis et petiolo decurrentibus, apice cuspidatis (acumine lato 3–5 mm. longo obtuso), margine integris et leviter recurvatis, costa utrinque subprominente, nervis secundariis utroque 5–7 arcuato-adscendentibus utrinque prominulis vel supra subimmersis, venulis supra obscuris subtus leviter elevatis; inflorescentiis axillaribus radiatim patentibus 2–4 cm. longis, a basi dichotome multidivisis, ramulis teretibus minute farinoso-ceriferis ad nodos bibracteolatis, bracteolis ovatis 0.5–1 mm. longis; floribus sessilibus in dichotomiis solitariis vel summo pedunculorum ultimorum geminatis; sepalis deltoideis acutis circiter 0.4 mm. longis et 0.8 mm. latis; petalis luteis tenuiter carnosis obovatis, 1.3–1.5 mm. longis, 1–1.3 mm. latis, apice rotundatis vel leviter emarginatis, margine integris; disco carnoso in labia 3 sacciformia staminigera circiter 0.25 mm. alta et 0.4 mm. lata interruptim laxato; staminibus 3, filamentis ligulatis 0.3 mm. longis, antheris circiter 0.1 mm. longis et 0.2 mm. latis, per rimas horizontales extrorsas (subapicales) dehiscentibus; ovario trigono-subgloboso sub anthesi 0.6–0.7 mm. diametro; loculis 3, ovulis in quoque loculo 2 collateralibus; stigmatibus 3 sessilibus divaricatis circiter 0.3 mm. longis staminibus oppositis, basin versus connatis, apice leviter bilobatis.

Type, *Smith 2547*, collected Nov. 22, 1937, in dense forest in basin of Kuyuwini River (Essequibo tributary), about 150 miles from mouth. It falls into a group of species of which only two are thus far known, *S. Krukovii* and *S. divaricata*, both described by the writer from the Amazon basin of Brazil. These species and the present one are characterized by having the stigmas opposite the stamens and bilobed and by the discontinuous disk. They fall into Miers' concept of his genus *Kippistia* in all respects except the bilobed stigmas. *S. Gleasoniana* is doubtless closest to *S. Krukovii*, but may be distinguished by its somewhat shorter leaves with less conspicuous apices, its paler spreading more copiously branched inflorescence of which the branches are minutely farinose-ceriferous, and its frequently emarginate petals. It is a pleasure to associate the specific name with that of Dr. H. A. Gleason, in recognition of his valuable work on the flora of British Guiana.

SALACIA ANOMALA (Miers) Peyr.

Northern slope of Akarai Mountains, in drainage of Shodikar Creek (Essequibo tributary), dense forest, alt. 300 m., *Smith 2907*. Previously known from Amazonian Brazil. The type, from the Rio Negro, has somewhat narrower leaves and more obvious veinlets than our specimen, but in floral characters the two are identical.

Salacia kanukuensis A. C. Smith, sp. nov.

Frutex scandens ubique glaber; ramulis fuscis subteretibus conspicue lenticellatis; foliis subobpositis vel oppositis vel saepe alternatis, petiolis rugosis supra canaliculatis nigrescentibus 7–10 mm. longis, laminis coriaceis siccitate supra viridibus subtus pallidioribus oblongis vel obovato-ellipticis, 8–11 cm. longis, 2.5–4 cm. latis, basi attenuatis petiolo decurrentibus, apice rotundatis vel breviter obtuse apiculatis, margine integris, costa utrinque acute elevatis, nervis lateralibus utroque 6–8 patulis prope margines adscendentibus et obscure anastomosantibus utrinque obscuris vel planis vel leviter insculptis, venulis immersis; pedunculo axillari gemmiformi sub anthesi 1–3-floro, bracteis coriaceis minutis deltoideis; floribus expansis 10–12 mm. diametro, pedicellis gracilibus 13–20 mm. longis; sepalis tenuiter carnosis late ovatis vel semiorbicularibus, 1.7–2 mm. longis, 1.8–2.6 mm. latis, apice rotundatis et saepe glanduloso-fimbriatis; petalis tenuiter carnosis oblongis vel ovato-ellipticis, 5.3–5.8 mm. longis, 3.5–4 mm. latis, extra conspicue glanduloso-punctatis, apice obtusis, margine integris, basi ad circiter 1.5 mm. angustatis, sub anthesi rotatis recurvatis vel revolutis; disco carnoso annulari-pulvinato, circiter 1 mm. alto, 3–3.3 mm. diametro, margine abrupte anguste complanato; staminibus 3 reflexis, filamentis ligulatis 1.6–1.8 mm. longis, basi ad 1 mm. latis distaliter angustatis, antheris transversaliter oblongis circiter 0.4 mm.

longis et 0.6 mm. latis, per rimas latas extrorsas dehiscentibus; ovario trigono sub anthesi circiter 1.3 mm. diametro, basi in disco immerso, loculis 3 circiter 4-ovulatis; stylo anguste conico circiter 0.8 mm. longo, apice obtuso.

Type, *Smith 3617*, collected Apr. 22, 1938, in dense forest on Mount Iramaikpang, northwestern portion of Kanuku Mountains, alt. 850 m. It falls into Miers' genus *Raddia* (Section VI of *Salacia* in Peyritsch's treatment in Mart. Fl. Bras.), in which it appears most closely related to *S. lacunosa* (Miers) Peyr., differing by its narrower leaves attenuate at the base, its much longer pedicels and larger flowers, and its entire rather than pectinate-ciliate sepals.

ICACINACEAE

DENDROBANGIA BOLIVIANA Rusby, Mem. Torrey Club **6**: 19.1896; Bull. Torrey Club **24**: 79. *pl. 294*.1897.

Clavapetalum surinamense Pulle, Rec. Trav. Bot. Néerl. **9**: 148.1912.
Asterolepidion elatum Ducke, Arch. Jard. Bot. Rio **3**: 207.1922.
Clavapetalum elatum Ducke, Arch. Jard. Bot. Rio **4**: 116.1925.

The three genera, each originally described as monotypic, cannot be maintained, and furthermore there are no conspicuous differences among the Bolivian, Amazonian, and Guiana specimens, which are here considered to be of one species only. Rusby's second paper on *Dendrobangia* carefully analyzes the affinities of the genus. I have seen the following specimens from British Guiana: Demerara River, *Persaud 113*, *La Cruz 2717;* Mazaruni River, *La Cruz 2856;* Essequibo River, near mouth of Onoro Creek, a tree 30 m. high on high land in dense forest, *Smith 2726*.

RHAMNACEAE

AMPELOZIZYPHUS AMAZONICUS Ducke

Basin of Essequibo River, near mouth of Blackwater Creek, lat. about 1°30′N., *Smith 2830*. A high-climbing liana in the forest, apparently not previously collected outside of Amazonian Brazil. The bark of the liana is fragrant and produces a lather in water; it is used in place of soap by the Wai-wai Indians.

SAPINDACEAE

PSEUDIMA FRUTESCENS (Aubl.) Radlk.

Kanuku Mountains, in drainage of Takutu tributaries, dense forest, alt. 200–400 m., *Smith 3242*, *3568;* basin of Kuyuwini River (Essequibo tributary), dense forest, *Smith 2522*. Radlkofer (Pflanzenreich **4** (165): 1112. 1933) has not cited any British Guiana specimens of this species, which apparently is not uncommon. The Wapisianas refer to it as "Powis-biaun" (Powis' eyes), because of the shiny black seed. When dried, this outer layer splits and curls, and is used as a bead in making necklaces.

DILLENIACEAE

DOLIOCARPUS CORIACEUS (Mart. & Zucc.) Gilg

Northern slope of Akarai Mountains, in drainage of Shodikar Creek (Essequibo tributary), alt. 300 m., *Smith 2903*. BRAZIL: Para: southern slope of Akarai Mountains, in drainage of Rio Mapuera (Trombetas tributary), alt. 500–700 m., *Smith 2952*. A liana in dense forest, the stem containing potable water. Apparently the first-mentioned collection adds British Guiana to the range of this Amazonian species.

OCHNACEAE*

Sauvagesia deficiens A. C. Smith, sp. nov.

Frutex nanus compactus ad 30 cm. altus perglaber; ramulis fusco-purpurascentibus teretibus striatis apicem versus copiose ramosis; stipulis lanceolatis 2–3 mm. longis copiose pectinato-ciliatis; petiolis gracilibus 1–2 mm. longis angustissime alatis; laminis siccitate membranaceo-papyraceis anguste ellipticis, 9–20 mm. longis, 4–7 mm. latis, basi attenuatis, apice subacutis, margine anguste calloso-recurvatis et conspicue glanduloso-serrulatis, costa supra subplanis vel elevatis subtus prominulis, nervis secundariis utroque 6–8 adscendentibus utrinque cum venulis paucis anastomosantibus plus minusve prominulis; floribus per bostryces 2–4-floris ad apices ramulorum in axillis foliorum parvorum dispositis; pedicellis gracilibus purpurascentibus 3–6 mm. longis; calyce basi subconstricto, sepalis scariosis lanceolato-oblongis, 3.5–4.5 mm. longis, 1.1–1.7 mm. latis, apice acutis, margine distaliter obscure denticulatis; petalis membranaceis albis obovato-oblongis, circiter 3 mm. longis et 1.5 mm. latis, apice rotundatis vel obtusis, basi angustatis, mox caducis; corona exteriore deficiente, lobis coronae interioris textura et colora petalis similibus sed saepe minoribus et interdum apice leviter bilobatis; filamentis circiter 0.4 mm. longis; antheris anguste oblongis, 1.3–1.5 mm. longis; ovario ellipsoideo-obconico sub anthesi circiter 1 mm. longo; stylo filiformi circiter 1.5 mm. longo truncato; capsula elongato-ellipsoidea 5–6 mm. longa acuta, seminibus 10–15 per placentam ellipsoideis circiter 0.7 mm. longis.

Type, *Smith 3640*, collected Apr. 22, 1938, on open rocky summit of Mount Iramaikpang, northwestern portion of Kanuku Mountains, alt. 975 m. By its lack of an outer row of staminodes, the new species demonstrates a relationship to the fourth section of the genus as outlined by Gilg. Its closest relative seems to be *S. fruticosa* Mart. & Zucc., from which it differs by its less crowded and much broader leaves, its comparatively smaller inner staminodes, and its larger capsules.

* In part by J. D. Dwyer.

Sauvagesia inconspicua Dwyer, sp. nov.

Herba annua 3–10 cm. alta remote foliata; ramulis paucis adscendentibus quibusdam a basi caulis ortis; stipulis 1–3 mm. longis ciliatis, ciliis erectis distantibus corpore longioribus; foliis apice ramulorum confertis, aliter distantibus, sessilibus vel subsessilibus; laminis 3 7 mm. longis, 1.5–3 mm. latis, apice rotundatis vel obtusis, margine integris vel maxime in foliis superioribus ad apicem crenatis, costa distincta, venis lateralibus indistinctis; floribus plerumque 3 in fasciculum ad apicem dispositis, pedicellis circiter 6 mm. longis; sepalis circiter 3.5 mm. longis et 1 mm. latis lanceolatis, apice acutis breviter purpureo-setosis, margine membranaceis; petalis roseis obovato-orbicularibus, 3–5 mm. longis, circiter 3 mm. latis, apice rotundatis, sepala longitudine subaequantibus; corona exteriore nulla, lobis interioribus circiter 3 mm. longis et 1 mm. latis, oblongo-ellipticis; staminibus circiter 2 mm. longis, quam coronae interioris lobis vix brevioribus; antheris oblongo-linearibus, quam filamentis tenuibus vix longioribus; ovario elliptico-ovoideo usque ad 1 mm. longo; stylo crasso apice truncato; capsula circiter 3–4 mm. longa, calycem aequante vel paullo excedente.

Type, *Smith 2309*, collected Oct. 25, 1937, on savanna at Wichabai, basin of Rupununi River, lat. about 2°52′N. With the preceding (*S. deficiens*), *S. inconspicua* falls into Section D of the genus according to Gilg's treatment, lacking the exterior corona. It is quite similar to *S. gracilis* Ule, from the nearby Rio Branco region of Brazil, in habit, but differs notably in floral and fruit characters, especially in the length of the interior corona, the long filaments of the stamens, the length of the capsule, and the fact that the capsule is equal to or slightly exceeding the calyx.

OURATEA CASTANEAEFOLIA (DC.) Engl.

Basin of Essequibo River, near mouth of Onoro Creek, lat. about 1°35′N., dense forest along river, *Smith 2767*. This plant seems to fall into Engler's concept of the species expressed in Mart. Fl. Bras. and agrees well with Brazilian material. I have not seen it previously reported from British Guiana.

CARYOCARACEAE

CARYOCAR MICROCARPUM Ducke

Basin of Essequibo River, near mouth of Onoro Creek, lat. about 1°35′N., dense forest along river, *Smith 2687*. Although common on varzea land in Amazonian Brazil, this species appears not to have been previously recorded from Guiana.

Caryocar riparium A. C. Smith, sp. nov.

Arbor robusta ampla ad 20 m. alta ubique praeter pedicellos sub anthesi parce puberulos glabra; ramulis robustis teretibus fuscis, internodiis 1.5 8

cm. longis, cicatricibus stipularum mox delapsarum conspicue pallidis; petiolis gracilibus subteretibus nigrescentibus (3.5)5–8 cm. longis basi incrassatis; stipellis plerumque 2 curvatis vel convolutis ad 3 mm. longis plus minusve persistentibus; petiolulis nigrescentibus anguste alatis, lateralibus 2–3 mm. terminalibus ad 6 mm. longis; laminis tenuiter coriaceis siccitate fusco-olivaceis aequalibus vel terminalibus paullo maximis ellipticis, 6–14 cm. longis, 2.5–5.5 cm. latis, basi acutis vel subattenuatis, apice obtuse cuspidatis vel breviter acuminatis (acumine ad 1 cm. longo), margine leviter revolutis et undulato-crenatis, costa supra subplana vel leviter elevata subtus prominente, nervis lateralibus utroque 9–13 patulis prope margines adscendentibus utrinque prominulis, venulis copiose reticulatis utrinque subplanis; pedunculis crassis (sub fructu ad 7 mm. diametro) rectis 9–16 cm. longis; racemis 15–25-floris, rhachide 1.5–4.5 cm. longa; pedicellis adscendentibus nigrescentibus 15–35 mm. longis, prophyllis ut videtur nullis; calyce in alabastro 4–6 mm. longo et summo 5–7 mm. diametro, basi contracto, lobis 5 late deltoideis 1–2 mm. longis et 3–4 mm. latis obtusis; petalis, filamentis, et stylis albis vel flavescentibus; petalis sub anthesi oblongis vel obovato-oblongis, 26–30 mm. longis, 11–14 mm. latis, apice rotundatis, basi angustatis, margine integris; staminibus numerosissimis, filamentis filiformibus 6–7 cm. longis, antheris parvis; fructibus depresso-subglobosis saepe 2-coccis, ut videtur immaturis 2.5–3 cm. altis ad 4.5 cm. latis, pericarpio siccitate nigrescente.

Type, *Smith 3034*, collected Feb. 12, 1938, in dense forest along the Kuyuwini River (Essequibo tributary), about 150 miles from its mouth. Although this species occurs locally along the upper Kuyuwini to such an extent that the surface of the water is frequently covered with its beautiful white flowers, it appears to have escaped description. In its flower color and general characteristics it seems related to *C. nuciferum* L., the Souari Nut, from which my Arawak assistants readily distinguished it. *C. riparium* is separable from *C. nuciferum* by its longer petioles and generally smaller leaflets, by the presence of persistent stipels, by its stout elongate peduncles and long pedicels, and by its comparatively small flowers and fruits. Possibly the relationship of *C. riparium* is with *C. barbinerve* Miq., but it differs from that by the less obviously serrate leaflet-margins, more crowded flowers, and shorter pedicels. The flower color of *C. barbinerve* has not been recorded, so a comparison of this important character cannot be made. The new species is of course at once distinguished from the common red-flowered species such as *C. glabrum* (Aubl.) Pers. and *C. microcarpum* Ducke.

GUTTIFERAE

CLUSIA AMAZONICA Pl. & Tr.

Basin of Essequibo River, near mouth of Onoro Creek, lat. about 1°35′N., dense forest in swamp, *Smith 2740*. This collection, with stami-

nate inflorescences, appears to agree well with previously known material from the basin of Rio Negro, but has the secondary nerves less obvious.

Tovomita caloneura A. C. Smith, sp. nov.

Arbor ad 20 m. alta perglabra; ramulis rugosis teretibus sed juventute complanatis; petiolis gracilibus supra leviter canaliculatis 18–35 mm. longis; laminis chartaceis siccitate fuscis juventute translucentibus late obovatis, 10–17 cm. longis, 5.5–10.5 cm. latis, basi longe attenuatis et petiolo decurrentibus, apice rotundatis saepe leviter emarginatis interdum inconspicue mucronulatis, margine anguste cartilagineis et leviter undulatis, costa supra plana et saepe canaliculata subtus prominente et striata, nervis secundariis numerosis inter se 2–5 mm. distantibus patulis utrinque leviter prominulis prope margines anastomosantibus, venulis copiosissime et intricate reticulatis immersis vel minutissime prominulis; inflorescentiis masculis tantum visis compactis terminalibus paucifloris, ad 1.5 cm. longis; bracteolis membranaceis ovatis alabastra involventibus; pedicellis crassis ad 5 mm. longis; alabastris subglobosis 5–7 mm. longis, apice conspicue breviter apiculatis; sepalis crasso-coriaceis concavis ut videtur 2; petalis 4 oblongis, apice obtusis, in alabastro 2.5–3 mm. longis, exterioribus 2–2.5 mm. latis, interioribus 1.3–1.8 mm. latis; staminibus multiseriatis numerosissimis (ad 100) inaequalibus in alabastro ad 1.5 mm. longis, filamentis crasso-carnosis latitudine antheris aequalibus, antheris oblongis apice obtusis, interioribus quam filamentis 2-plo longioribus, loculis parallelis.

Type, *Smith 2720*, collected Dec. 18, 1937, in dense forest on high land near mouth of Onoro Creek, basin of Essequibo River, lat. about 1°35′N. It is a species characterized by fine obovate leaves which are translucent when young, allowing the complicated reticulation of the veinlets to be seen, the staminate inflorescence is contracted and 5–10-flowered, the sepals are thick and leathery, and the stamens have broad filaments shorter than the anthers. In foliage the new species most closely resembles *T. umbellata* Benth., a species with less compact inflorescences, smaller flowers, and short anthers. Also of the alliance of *T. caloneura* are *T. brevistaminea* Engl. and *T. Eggersii* Vesque, but they are readily distinguished by their cuspidate or acuminate leaf-apices and short anthers, among other obvious characters.

PASSIFLORACEAE*

PASSIFLORA RIPARIA Mart.

Western extremity of Kanuku Mountains, in drainage of Takutu River, dense forest, alt. 500 m., *Smith 3157*. Although fairly abundant in Amazonian Brazil and Peru, this species is here reported from Guiana for the first time.

* By E. P. Killip.

PASSIFLORA LONCHOPHORA Harms

Western extremity of Kanuku Mountains, in drainage of Takutu River, dense forest, alt. 200–500 m., *Smith 3155, 3286*. Previously known only from the type locality in the Rio Branco region of Brazil.

Passiflora pachyantha Killip, sp. nov.

Scandens, caule terete vel subangulato, rufo-tomentuloso; stipulae anguste oblongo-lanceolatae vel oblanceolatae, subpersistentes; petioli ad medium biglandulosi; folia ovata vel oblongo-ovata, abrupte acuminata, ad basin rotundata, integerrima, penninervia, subcoriacea, supra glabra, subtus breviter pilosa; bracteae liberae, magnae, late ovatae; calycis tubus late campanulatus; sepala petalaque ovato-oblonga; coronae filamenta multiseriata, extimis duobus ligulata, alteris multo brevioribus; operculum erectum, integerrimum; ovarium rufo-sericeo-tomentosum.

Liana, with long, rather slender tendrils; stem stout, terete, subangular upwards, rufo-tomentulous; stipules narrowly oblong-lanceolate or oblanceolate, 1.7–2 cm. long, 4–5 mm. wide, acuminate at apex, narrowed to base, obscurely glandular-serrulate, subcoriaceous, appressed-pilosulous, reddish, subpersistent; petioles 1.5–2 cm. long, rufo-tomentose, biglandular at middle, the glands short-clavate, about 1 mm. long; leaf-blades ovate or oblong-ovate, 11–15 cm. long, 6–8 cm. wide, abruptly sharp-acuminate at apex, rounded at base, entire, penninerved (principal lateral nerves about 9 to a side), subcoriaceous, above glabrous and sublustrous, beneath rufescent, densely short-pilose on nerves and veins; peduncles solitary, 4–6 cm. long, rufo-tomentulous; bracts 3, involucrate, free to base, broadly ovate, 4.5–5 cm. long, 3–4.5 cm. wide, remotely and irregularly glandular-serrulate toward apex, pilosulous without, glabrous within, reddish, persistent and enveloping the flower even with the fruit well developed; flowers rich pink; calyx tube broadly campanulate, about 1 cm. long and 2 cm. wide, densely pilosulous without; sepals broadly ovate-oblong, 4–5 cm. long, 1.8–2 cm. wide, obtuse, ecorniculate, fleshy, densely tomentose without; petals similar to and about as long as sepals, slightly narrower, glabrous; corona filamentose, in several series, the filaments of the 2 outer series ligulate, radiate, the outermost about 2 cm. long and 1 mm. wide, those of the second series 3.5–4 cm. long and nearly 2 mm. wide, those followed by several indefinite series of minute tubercles less than 1 mm. long, the innermost filaments filiform, 5–6 mm. long, reflexed, massed in 4 or 5 series; operculum membranous, erect, about 5 mm. high, entire; limen borne close to base of gynophore, barely 1 mm. high, denticulate; gynophore stout, enlarged in lower half by 2 trochlea; ovary ovoid, densely rufo-sericeo-tomentose; fruit ovoid, 4–5 cm. long, about 2 cm. in diameter, densely pilosulous, rich pink with white mottling, the pericarp

hard; seeds obcordate, 5–6 mm. long, 4–4.5 mm. wide, compressed, thickened along margin, closely reticulate on each face except near margin.

Type, *Smith 3620*, collected Apr. 22, 1938, in dense forest on Mount Iramaikpang, northwestern portion of Kanuku Mountains, and deposited in the U. S. National Herbarium (no. 1,742,142).

At first glance this interesting plant suggests both *P. coccinea* and *P. riparia*, which are placed in two separate subgenera in my monograph[5] of the American Passifloraceae. Possibly it is a natural hybrid between these two but I do not believe that such is the case. Clearly this species belongs to the subgenus *Granadilla*, but within that it does not go well into any of the fifteen series into which I divided that subgenus. It is best placed in a series by itself, coming between *Laurifoliae* and *Serratifoliae*, to which the name *Pachyanthae* may be given. The leaves, though pubescent on the under side, are entire, and the stipules are larger and persist longer than in the two related series.

Mitostemma Glaziovii Mast.

Western extremity of Kanuku Mountains, in drainage of Takutu River, in dense forest, alt. 250 m., *Smith 3117*. The genus contains three species, *M. Jenmanii* Mast., known only from the type locality along the Mazaruni River, British Guiana, *M. Glaziovii*, hitherto reported only from the vicinity of Rio de Janeiro, and *M. brevifilis* Gontsch., of southern Brazil. The present record of *M. Glaziovii* in British Guiana is a remarkable extension of range for the species.

CACTACEAE*

The cacti of the present collection are of unusual interest. Although only three species were obtained, they all prove to be distinctly new, with affinities toward south Brazilian and Argentinian species. It is to be hoped that all of them may eventually be introduced into cultivation, so that their relationships may be more closely studied.

Cereus longiflorus Alexander, sp. nov.

Planta a speciebus adhuc cognitis floribus longissimis (27–29 cm. longis) differt; *C. argentinensi* Britt. & Rose et *C. variabili* Pfeiffer affinis, a primo spinis brevioribus gracilioribus numerosioribus, a secundo caule valido et spinis longioribus etiam distinguitur.

Plant 2 m. tall or more, 4-angled, simple, the areoles 1–2 cm. apart with felty cushions about 3–4 mm. in diameter; radial spines 6–8, 7–20 mm. long, the centrals 4–6, 18–35 mm. long, all orange-brown when young, gray after maturity; flower 27–29 cm. long, from an enlarged tan cushion, the ovary

[5] Killip, E. P. The American Species of Passifloraceae. Field Mus. Publ. Bot. **19**: 1–613.1938.

* By E. J. Alexander.

15–18 mm. long, the tube 6–7 cm. long, the throat 9–10 cm. long; throat-scales acutish, the sepals greenish, pink-tinged, acute, the petals acute, white; stamens white; style 20–22 cm. long, the stigmas 12; fruit 9 by 6 cm., oblong-ovoid, pink; seeds black, oblong-reniform, 2.2 mm. long, the testa shining, minutely pimply, the hilum oblique.

Type, *Smith 3387*, collected Mar. 31, 1938, on rock-ledges surrounded by dense forest, northwestern slopes of Kanuku Mountains, in drainage of Moku-moku Creek (Takutu tributary), alt. 300 m.

Cephalocereus kanukuensis Alexander, sp. nov.

Planta *C. catingicola* (Gürke) Britt. & Rose et *C. brasiliensi* Britt. & Rose affinis, spinis gracillimis, areolis confertim dispositis, areolarum pilis sericeis, floris tubo graciliore differt; habitu *C. brasiliensi* similis sed erectior et spinas numerosiores gerens.

Plant 1–2 m. tall, 4-angled, unbranched; areoles 5–6 mm. apart with 12–16 radial spines up to 6 mm. long and 4–6 central spines, the shorter 7–10 mm. long, the longer 17–30 mm. long, all dull orange-brown when young and gray at maturity; areoles at anthesis developing a mass of soft tan wool which becomes gray and persists for a year or two on the stems; flowers about 7 cm. long, nocturnal, the ovary 12 mm. long, the tube about 12 mm. long, the throat 22–25 mm. long, 2–2.5 cm. in diameter at base, the ovary and tube naked, with a few obtuse ovate scales on the throat, these passing into the obovate obtuse outer perianth segments; outer perianth segments green, red-tinged, oblong-obovate, gradually passing into the spatulate white inner ones; stamens white, covering the inner face of the throat; style exceeding the perianth, the 7 or 8 stigmas exserted; fruit globose, about 2.5 cm. in diameter, capped by the persistent perianth; seeds oblong-reniform, black, shining, 1.6 mm. long, the coat finely pitted in rows following curvature of the seed.

Type, *Smith 3380*, collected Mar. 31, 1938, on rock-ledges surrounded by dense forest, northwestern slopes of Kanuku Mountains, in drainage of Moku-moku Creek (Takutu tributary), alt. 300 m.

Cactus Smithii Alexander, sp. nov.

Planta *C. Townsendii* Britt. & Rose et *C. bahiensi* Britt. & Rose affinis, fructibus majoribus et pallidioribus, spinis longioribus pallidioribus et conspicue patentibus, cephalii setis rubentibus vel purpureis differt; a *C. Zehntneri* Britt. & Rose et *C. Neryi* (Schum.) Britt. & Rose spinis longioribus pallidioribus et inconspicue curvatis differt; a speciebus eis omnibus perianthii segmentis abrupte rotundatis vel truncatis distinguitur.

Plants solitary, 2 dm. high or more, with 12–14 ribs; areoles 2–2.5 cm. apart, felty when young, the felt soon deciduous; spines reddish-brown, becoming gray-brown, the radials 8–9, 1.5–3 cm. long, some slightly re-

curved toward the tip, the central 1, stouter than the radials, erect, about 3.5 cm. long. Cephalium 8–9 cm. across, elongating with age, composed of white wool, the brownish red bristles much longer than the wool; flowers 2–2.2 cm. long, funnelform, rose-pink, the perianth segments obtuse or emarginate, about 5 mm. long; fruit clavate to oblanceolate, 2 cm. long, pink, the seeds not very numerous, black, shining.

Type, *Smith 3388*, collected Mar. 31, 1938, on exposed rock-ledges in dense forest, northwestern slopes of Kanuku Mountains, in drainage of Moku-moku Creek (Takutu tributary), alt. 300 m.

MELASTOMATACEAE*

Acisanthera nana Ule

Basin of Rupúnuni River, Wichabai, lat. about 2°52′N., savanna, *Smith 2305*. New to British Guiana; hitherto known from type locality on Rio Branco in adjacent Brazil.

Miconia umbrosa DC.

Basin of Essequibo River, near mouth of Onoro Creek, lat. about 1°35′N., in dense forest on high land, *Smith 2680*. New to British Guiana; known from a few stations in Amazonas, Brazil.

Miconia tetragona Cogn.

Basin of Essequibo River, near mouth of Onoro Creek, lat. about 1°35′N., in dense forest on high land, *Smith 2712*. New to British Guiana; known heretofore only from the original collections of Spruce in the basin of the upper Rio Negro.

Clidemia Smithii Gleason, sp. nov.

Sect. *Staphidium:* Frutex 1–2 m. altus, caulibus longe setosis et juventute tenuiter stellato-tomentosis. Petioli satis validi, 2–4 cm. longi, setosi et stellati. Laminae membranaceae, elliptico-oblongae, maximae 14 cm. longae 6 cm. latae, breviter acuminatae, crenato-dentatae, sparsim ciliatae, basi rotundatae vel cordulatae, 5-nerviae, jugo marginali praetermisso, supra sparse setosae, subtus sparse setosae ad venas primarias longiore densiore setosae; venae supra fere planae subtus leviter elevatae pallidae, secundariae sub angulo 70–80° divergentes, tertiariae late reticulatae. Inflorescentia brevis, fere sessilis, conferta, racemosa, 15 mm. longa; pedicelli veri 0.8 mm. longi. Hypanthium campanulatum, ad torum 3.8 mm. longum, sparse setosum, pilis patentibus, 3–3.5 mm. longis, tenuiter stellato-tomentosum; torus squamis 10 alte fimbriatis ornatus. Flores 5-meri. Calycis tubus circa 1 mm. longus, sinibus rotundatis; sepala diaphanea, oblonga, 1.3 mm. longa, paucisetosa, sparse ciliata; dentes exteriores

* By H. A. Gleason.

graciliter subulati, erecti, 5 mm. longi, patenti-setosi, apice seta 4 mm. longa terminati. Petala alba obovata, 9–10 mm. longa, 5–5.5 mm. lata, equilatera, fere integra. Stamina isomorpha; filamenta complanata, 2.7 mm. longa; antherae erectae, subulatae, 3.5 mm. longae, thecis convolutis, connectivo simplici. Ovarium fere liberum, 5-loculare, anguste ovoideum, summo minutissime pilosum; stylus 6.5 mm. longus, stigmate capitato, 0.5 mm. diametro.

Type, *Smith 3500*, collected Apr. 7, 1938, in dense forest on northwestern slopes of Kanuku Mountains, in drainage of Moku-moku Creek (Takutu drainage), alt. 200–300 m. Another collection is *Smith 3179* from western extremity of Kanuku Mountains in drainage of Takutu River, alt. 500–700 m. The presence of toral scales at once shows the relation of *C. Smithii* to such well known species as *C. hirta*, *C. dentata*, and *C. tiliaefolia*. Among these, ours is the only one with developed sepals; in the species heretofore known the calyx-tube is truncate at the summit. Its leaves are narrower than those of *C. hirta* or *C. tiliaefolia;* it lacks the glandular pubescence of the latter and has abundant stellate hairs which are not developed on the former. In leaf-shape it is not unlike *C. dentata* or *C. macropetala*, but the former has 5-pli-nerved leaves and truncate calyx, while the latter, recently described from Trinidad, has 3-nerved leaves acute at the base and much narrower petals.

Clidemia silvicola Gleason, sp. nov.

Sect. *Sagraea:* Frutex 2 m. altus. Caules graciles, dense breviterque villosi et minutissime furfuracei, internodiis saepe valde elongatis. Folia in quoque jugo inaequalia. Petioli graciles, 3–9 cm. longi, breviter villosi. Laminae membranaceae, ovatae, abrupte angusteque acuminatae, obcrenato-denticulatae et ciliatae, basi cordulatae, 7-nerviae, utrinque breviter setosae, majores usque 16 cm. longae, 9 cm. latae, minores usque 12 cm. longae, 6 cm. latae, superiores multo minores. Inflorescentiae axillares, parce ramosae, pauciflorae, 3 cm. longae, densiter breviterque villosae; bracteae lineari-subulatae, 1–2 mm. longae; pedicelli circa 1 mm. longi. Flores 4-meri. Hypanthium cylindricum, ad torum 2.4 mm. longum, furfuraceum, infra medium breviter glanduloso-villosum. Calycis tubus 0.5 mm. longus, erectus, truncatus, intus minutissime pubescens; dentes exteriores crasse subulati, pubescentes, tubum 0.5 mm. excedentes. Petala ovato-oblonga, 2.3 mm. longa, obscure retusa. Stamina isomorpha. Filamenta 1.9 mm. longa, basi complanata, superne incrassata. Antherae subulatae, 2 mm. longae, poro apicali dehiscentes; connectivum simplex. Ovarium semi-inferum, 4-loculare, summo libero truncato-conicum, minutissime villosum. Stylus 4 mm. longus, stigmate truncato.

Type, *Smith 3608*, collected Apr. 22, 1938, in dense forest on Mount Iramaikpang, northwestern portion of Kanuku Mountains, alt. 700 m.

Smith 2635, from dense forest in the basin of Kuyuwini River (Essequibo tributary), is conspecific, but exhibits more glandular pubescence. The species is undoubtedly related to the well known *C. plumosa* and *C. umbrosa*, of the West Indies and northern South America, both of which are stout plants with thick leaves, densely long-hirsute throughout and with a broader hypanthium.

HENRIETTELLA PATRISIANA (DC.) Naud.

Parabaru Savanna, on watershed between Rupununi and Kuyuwini Rivers, lat. about 2°10′N., edge of forest, *Smith 3057*. New to British Guiana; also in French Guiana and Surinam.

VACCINIACEAE

SATYRIA PANURENSIS (Benth.) Benth. & Hook.

Basin of Essequibo River, near mouth of Onoro Creek, lat. about 1°35′N., *Smith 2673, 2798*. Epiphytic liana or shrub, in dense forest. *2673* is very incomplete and is referred here with uncertainty due to its unusually large leaves (to 22.5 cm. long). The only previous collection from British Guiana was from the Potaro region.

MYRSINACEAE

Stylogyne latifolia A. C. Smith, sp. nov.

Arbor ad 10 m. alta perglabra; ramulis gracilibus subteretibus rugosis fuscis; petiolis crassis 12–20 mm. longis saepe anguste alatis; laminis chartaceis obscure pellucido-punctatis siccitate fusco-viridibus late ellipticis, 15–21 cm. longis, 8–10.5 cm. latis, basi acutis vel attenuatis et petiolo decurrentibus, apice breviter cuspidato-acuminatis, margine integris anguste revolutis et saepe leviter undulatis, costa supra leviter canaliculata subtus prominente, nervis secundariis dense parallelis utrinque prominulis e margine 6–10 mm. distantibus anastomosantibus, venulis copiose et conspicue reticulatis utrinque paullo prominulis; inflorescentiis axillaribus vel e ramulis infra folia orientibus, plerumque bipinnatim paniculatis 1–2 cm. longis (vel maturitate longioribus?), ramulis flores 5–10 umbellato-corymbosos gerentibus; bracteis bracteolisque membranaceis obovatis ad 3 mm. longis glanduloso-lineolatis; pedicellis (immaturis) brevissimis; sepalis 5 membranaceis oblongis, circiter 1.7 mm. longis et 1.2 mm. latis (maturitate majoribus?), apice rotundatis, dense glanduloso-lineolatis; corollae lobis sepalis similibus et plus minusve aequalibus; staminibus petalis prope basin insertis, filamentis brevissimis, antheris oblongis 0.8–1 mm. longis; inflorescentiis fructiferis ad 5 cm. longis, baccis globosis maturitate 4–5 mm. diametro, siccitate rugosis.

Type, *Smith 2808*, collected Dec. 24, 1937, in dense forest along Essequibo River near mouth of Onoro Creek, lat. about 1°35′N. The inflores-

cence branches are pink, the corolla white, the filaments greenish, the young fruit green, becoming black. *S. latifolia* appears to be most closely related to *S. tenuifolia* Britton, of Trinidad, which it resembles in its ample chartaceous leaves, but from which it differs by its longer petioles, slightly broader and thicker leaf-blades with the secondary nerves anastomosing somewhat farther from the margin, shorter pedicels, which even in fruit do not exceed 5 mm., and more obviously glandular-lineolate sepals. Other species with which *S. latifolia* should be compared are *S. Schomburgkiana* (A. DC.) Mez, *S. micans* Mez, *S. Poeppigii* Mez, and *S. Kappleri* Mez. All of these can be readily distinguished by their proportionately much narrower leaves. Compared with *S. latifolia*, *S. Schomburgkiana* has terminal inflorescences and the filaments highly epipetalous; *S. micans* has the inflorescence somewhat more ample and the filaments highly epipetalous; *S. Poeppigii* has the leaves more coriaceous and the petioles shorter; *S. Kappleri* has the flowers apparently larger and the petals emarginate.

Cybianthus viridiflorus A. C. Smith, sp. nov.

Frutex gracilis circiter 2 m. altus; ramulis subteretibus juventute dense ferrugineo-tomentellis mox glabris; petiolis rugosis subteretibus 12–18 mm. longis, superne anguste alatis, glabrescentibus; laminis chartaceis vel tenuiter coriaceis fusco-viridibus glabris opacis anguste obovato-ellipticis, 18–23 cm. longis, 6–8 cm. latis, basi longe attenuatis et petiolo decurrentibus, apice acutis vel breviter acuminatis, margine integris et leviter recurvatis, costa supra canaliculata subtus prominente, nervis secundariis utroque 10–12 rectis prope margines conspicue anastomosantibus supra valde prominulis subtus prominentibus, venulis copiose et conspicue reticulatis utrinque prominulis; inflorescentiis in axillis foliorum apicem ramulorum versus saepe binis 17–23 cm. longis multifloris; pedunculo ad 1 cm. longo et rhachide gracili ferrugineo-tomentellis; floribus glabris viridibus solitariis bracteis linearibus tomentellis 1–2 mm. longis subtentis; pedicellis 0.8–1.5 mm. longis; sepalis ovato-oblongis, 1.1–1.3 mm. longis, circiter 1 mm. latis, parce glanduloso-punctatis, apice obtusis, margine glandulosis; corollae lobis oblongis fere ad basin liberis oblongis, 2.2–2.6 mm. longis, circiter 1.5 mm. latis, conspicue glanduloso-punctatis vel lineolatis, apice rotundatis; staminibus corollae basi affixis, filamentis ligulatis 0.7–0.9 mm. longis, antheris ovoideo-oblongis 0.5–0.6 mm. diametro per rimas subapicales dehiscentibus; ovario valde reducto.

Type, *Smith 3661*, collected Apr. 22, 1938, on edge of forest near open rocky summit of Mount Iramaikpang, northwestern portion of Kanuku Mountains, alt. 975 m. *C. viridiflorus* bears a superficial resemblance to *C. Brownii* Gleason of lowland British Guiana and *C. cyclopetalus* Mez of the Amazon region, but both of these have the corolla lobes highly con-

nate. A closer relative, on inflorescence characters, is the Brazilian-Bolivian *C. psychotriifolius* Rusby, from which the new species is distinguished by its somewhat thicker leaves with prominulous secondary nerves and its conspicuously punctate corollas.

EBENACEAE

Diospyros akaraiensis A. C. Smith, sp. nov.

Arbor ad 5 m. alta; ramulis gracilibus teretibus juventute densissime ferrugineo-tomentosis demum glabris; petiolis supra leviter canaliculatis 11–15 mm. longis ut ramulis tomentosis; laminis chartaceis vel tenuiter coriaceis late ellipticis, 12–17 cm. longis, (5.5–)7–8 cm. latis, basi rotundatis vel obtusis et petiolo decurrentibus, apice breviter cuspidatis (acumine ad 7 mm. longo), margine recurvatis vel paullo revolutis, supra nigro-punctatis et glabris vel juventute parce albido-puberulis, subtus densissime et constanter ferrugineo- vel rufo-tomentosis (pilis 0.6–0.9 mm. longis), costa supra canaliculata vel subplana subtus prominente, nervis secundariis 7–9 arcuato-adscendentibus prope margines anastomosantibus supra prominulis subtus valde elevatis, venulis reticulatis paucis utrinque prominulis; inflorescentiis ♂ axillaribus glomerulatis paucifloris ubique praeter corollae apicem densissime ferrugineo-tomentellis; pedicellis 0.5–2 mm. longis; calyce campanulato circiter 4 mm. longo intra dense sericeo, lobis 4 deltoideis acutis, 1.5–2 mm. longis; corolla crasse carnosa valde urceolata, 6–7 mm. longa, intra glabra, limbo 3–4 mm. diametro apice contracto, lobis oblongis alabastro imbricatis 1.5–2 mm. longis; staminibus basi corollae insertis, filamentis glabris ad 2.2 mm. longis apicem versus plerumque furcatis, antheris 12–14 oblongis 0.8–1.3 mm. longis dorsaliter setosis apice conspicue acuminatis (acumine circiter 0.7 mm. longis); ovario nullo.

Type, *Smith 2947*, collected Jan. 18, 1938, in dense forest on southern slope of Akarai Mountains, in drainage of Rio Mapuera (Trombetas tributary), State of Para, BRAZIL, alt. 500–700 m. It is a species of Hiern's Section *Paralea*, very suggestive of *D. guianensis* (Aubl.) Gürke, from which, however, it seems specifically distinct. The new species has consistently broader leaves which are definitely elliptic rather than oblong. Although the leaves of *D. guianensis* are sometimes deciduously pubescent beneath, the hairs are strigose, short, and closely appressed; *D. akaraiensis* has the leaves persistently pubescent beneath, the hairs spreading, tangled, and somewhat longer. The new species is further distinguished by its fewer and somewhat smaller anthers with a much more pronounced acumen.

Diospyros Matheriana A. C. Smith, sp. nov.

Arbor gracilis ad 7 m. alta, ramis elongatis; ramulis subteretibus fuscis vel cinereis novellis puberulis mox glabris; petiolis 6–10 mm. longis leviter

canaliculatis demum glabris; laminis tenuiter coriaceis siccitate fuscis elliptico-oblongis, 15–23 cm. longis, 5.5–7.5 cm. latis, basi rotundatis, apice gradatim acuminatis (acumine acuto 5–10 mm. longo), margine leviter revolutis et integris, supra glabris, subtus sparse setosis glabrescentibus, costa supra acute elevata subtus prominente, nervis secundariis utroque 8–10 supra impressis subtus prominentibus e margine 6–10 mm. conspicue anastomosantibus, venulis paucis reticulatis supra leviter impressis vel obscuris subtus prominulis; inflorescentiis fructiferis axillaribus compactis ut videtur glomerulatis, fructibus paucis; calyce sub fructu accrescente chartaceo fere ad basin diviso ubique pilis pallidis 1.3–1.8 mm. longis setoso, lobis 5 patulis oblongis subacutis, 11–13 mm. longis, 4–6 mm. latis; corolla sub fructu persistente rotata 13–15 mm. longa fere ad basin divisa, lobis 5 oblongis obtusis 3–4 mm. latis praeter pilorum pallidorum 2–3 mm. longorum lineam dorsalem medianam glabris; staminodiis 13–18 corolla paullo supra basin affixis linearibus, circiter 5 mm. longis, dense setosis; fructibus subglobosis vel ellipsoideis, 15–20 mm. diametro, dense setosis (pilis pallide luteis 3–5 mm. longis), apice apiculatis, pericarpio extra ruguloso tenui circiter 0.5 mm. crasso, loculis ut videtur 8, seminibus oblongis 12–15 mm. longis.

Type, *Smith 3611*, collected Apr. 22, 1938, in dense forest on Mount Iramaikpang, northwestern portion of Kanuku Mountains, alt. 750 m. It is a pleasure to name this species in honor of Father H. C. Mather, S. J., of St. Ignatius Mission on the Takutu River, in appreciation of his keen interest in the natural history of British Guiana and in remembrance of his companionship during an ascent of Mount Iramaikpang.

The present species is not closely related to the four thus far known from the colony and is quite distinct from the Amazonian species known to me. The corollas persisting at the bases of apparently mature fruits indicate that a species of Hiern's Section *Rospidios* is represented. The alliance of the new species is probably with *D. glomerata* Spruce or *D. amazonica* Krause, from both of which it differs by narrower leaves with impressed secondary nerves conspicuously anastomosing much farther from the margin. *D. Matheriana* appears to have larger corollas than either of its allies.

LOGANIACEAE

ANTONIA OVATA Pohl

Basin of Rupununi River, Karenambo, lat. about 3°45′N., scrub savanna, *Smith 2196*. A slender tree or shrub to 4 meters high, fairly abundant on the savannas of the Rupununi-Takutu region, known to the Wapisianas as "Iñacu." It is considered by that tribe and the Macusis a very effective fish-poison, a fact which I believe has not previously been published. The method of use is as follows: leaves are stripped from the plant and placed in a hole, where they are pounded to a pulp which subse-

quently is thrown into stagnant or slowly flowing water. Although slow in action, necessitating three or four hours to kill or paralyze the fish, the plant is said to be frequently used.

The form which occurs in British Guiana has small leaves obviously pilose beneath and has been described as *A. pilosa* Hook. However, study of herbarium specimens shows a series between this form and the larger-leaved glabrous one of central and southeastern Brazil.

GENTIANACEAE

Voyria clavata Splitg.

Basin of Essequibo River, dense forest near Itanime Falls, lat. about 5°2′N., *Smith 2149*. Although the specimen cannot be referred here with absolute certainty, it agrees well with descriptions and with Splitgerber's plate. However, the corolla of our specimen has a bright orange tube and white lobes; according to Jonker (Pulle, Fl. Sur. 4: 415.1936) the Surinam specimens have the upper part of the corolla lilacinous, the lower part yellowish white. As only a single specimen was found, the flower, which is slightly more than 10 cm. long, has not been dissected. Apparently the species has previously been known from French Guiana and Surinam.

Voyria coerulea Aubl.

Northern slope of Akarai Mountains, in drainage of Shodikar Creek (Essequibo tributary), alt. 600 m., *Smith 3007;* northwestern slopes of Kanuku Mountains, in drainage of Moku-moku Creek (Takutu tributary), alt. 200–300 m., *Smith 3422*. The few specimens obtained in these localities differ from Aublet's plate and from various descriptions by having the flowers usually single, although one plant is 2-flowered and one is 3-flowered. In other respects our specimens seem to belong with the species; possibly more ample material will establish this form as of nomenclatural significance.

APOCYNACEAE*

Geissospermum argenteum Woodson, sp. nov.

Arbor excelsa usque 20–30 m. alta; ramulis graciliusculis dense et minute sericeis; foliis alternatis breviter petiolatis ovato-ellipticis apice plus minusve longe caudato-acuminatis basi late obtusis 13–16 cm. longis 5–6.5 cm. latis membranaceis, supra dilute viridibus glabris parum illustris venis venulisque in sicco plus minusve elevatis, subtus omnino densissime argenteo-sericeis lucentibus, petiolo 0.4–0.5 cm. longo minute sericeo; inflorescentiis extra-axillaribus omnino dense sericeis quam foliis multo brevioribus plerisque dichotomis, pedunculo composito ca. 1 cm. longo vel breviore, floribus 30–40 parvis luteo-brunneis subglomeratis; bracteis

* By R. E. Woodson.

minute ovato-lanceolatis vix 0.1 cm. longis; pedicellis ca. 0.15 cm. longis; calycis laciniis ovatis acutis 0.15 0.2 cm. longis extus minute sericeis intus glabriusculis; corollae salverformis extus densissime sericeae tubo 0.4 cm. longo basi ca. 0.15 cm. diam., lobis late ellipticis obtusis 0.2 cm. longis vel paulo brevioribus patulis utrinque sericeis; antheris cordatis apiculatis ca. 0.05 cm. longis; stigmate subcapitato obscure apiculato ca. 0.05 cm. longo; ovariis ca. 0.07 cm. longis dense pilosulis; nectario haud viso; folliculis ignotis.

Type, *Smith 2559*, collected Nov. 22, 1937, in dense forest in basin of Kuyuwini River (Essequibo tributary), about 150 miles from mouth, and deposited in the herbarium of the Missouri Bot. Gard. Another collection of apparently the same species is *Smith 2825*, from basin of Essequibo River near mouth of Blackwater Creek, lat. about 1°30′N., in dense forest. This handsome species is apparently closely related to *G. excelsum* Kuhlmann, of Brazil, but the indument of that is described as "ochraceous-ferruginous," the leaves are obtusish at the apex, and the corolla is much larger (1.2–1.3 cm. long).

"The Wapisianas know the tree (*2559*) as 'Marisoba,' and consider it an effective remedy for malaria. The bark is boiled down to make a liquid of a syrup-like consistency, which not only is used to cure fever, but which is used on dogs as a mange-cure. The Wai-wais know the plant (*2825*) as 'Uataki,' and sometimes use the bark as a component of their arrow-poison. My informant admitted, however, that it is not an essential ingredient, and that poison made without it seemed essentially as effective."—A. C. S.

COUMA MACROCARPA Barb. Rodr.

Basin of Kuyuwini River (Essequibo tributary), 150 miles from mouth, *Smith 2579;* basin of Essequibo River near mouth of Onoro Creek, lat. about 1°35′N., *Smith 2713*. A tree about 30 m. high in dense forest on high land, yielding an abundant white latex. The Wapisiana name is "Karimein"; the latex hardens into a firm cement which is used to set the stone points into the wooden base of cassava graters.

AMBELANIA ACIDA Aubl.

Basin of Kuyuwini River (Essequibo tributary), about 150 miles from mouth, in dense forest, *Smith 2581*. A tree about 15 m. high, with white latex and a white corolla. This rare species has apparently been collected but twice previously, in French Guiana and Surinam.

ASCLEPIADACEAE*

Matelea herbacea Woodson, sp. nov.

Herba suffrutescens ca. 3–4 dm. alta; rami juventute minute et dense puberuli demum glabrati. Folia opposita oblongo-lanceolata apice lon-

* By R. E. Woodson.

giuscule subcaudato-acuminata basi obtusa 12–15 cm. longa 2.5–4 cm. lata tenuiter membranacea, supra glabra costa minutissime puberula excepta nervis 6–7 arcuatis prope marginem anastomosantibus, subtus glabra; petiolus 1.8–2.5 cm. longus minute et dense puberulus; inflorescentia axillaris racemosa corymbiformis minutissime puberulo-papillata ca. 5-8-floris 3.5–4 cm. longa; bracteae setaceae vix 0.75 cm. longae. Calyx fere ad basin partitus, laciniis oblongo-ovatis obtusis 0.25 cm. longis utrinque puberulo-papillatis. Corolla extus dilute viridis intus purpurea rotata, tubo ca. 0.1 cm. longo ca. 0.15 cm. diam. glabro, lobis patulis late oblongis rotundatis 0.6 0.7 cm. longis utrinque minutissime papillatis. Corona carnosula ca. 0.4 cm. diam. sinuato-crenulata. Gynostegium ca. 0.2 cm. altum stigmate ca. 0.25 cm. diam. Pollinia compresse ovoidea ca. 0.05 cm. longa; caudiculae ca. 0.03 cm. longae; corpusculum late sagittatum ca. 0.025 cm. longum. Fructus non visus.

Type, *Smith 2883*, collected Jan. 13, 1938, in dense forest along Shodikar creek (Essequibo tributary), lat. about 1°18′N., and deposited in the herbarium of the Missouri Bot. Gard. This species is well distinguished from the three previously known species of the genus by its erect herbaceous habit and by its conspicuously larger flowers.

BORAGINACEAE*

Tournefortia candidula (Miers) Johnston

Western extremity of Kanuku Mountains, in drainage of Takutu River, on exposed rock ledges surrounded by dense forest, alt. 400 m., *Smith 3150*. Previously known only from eastern Brazil.

Cordia lomatoloba Johnston

Northwestern slopes of Kanuku Mountains, in drainage of Moku-moku Creek (Takutu tributary), dense forest, alt. 200–300 m., *Smith 3448*, *3491*. Previously known only from the southern tributaries of the Amazon in Brazil.

Cordia Sagotii Johnston

Western extremity of Kanuku Mountains, in drainage of Takutu River, dense forest, alt. 700 m., *Smith 3301*. New to British Guiana, but hardly unexpected, as are the two preceding.

BIGNONIACEAE**

Arrabidaea nigrescens Sandwith, sp. nov.

A. molli (Vahl) Bur. et K. Schum. affinis, forma atque colore (siccitate nigrescente) foliolorum, indumento multo breviore praecipue differt.

Frutex alte scandens; ramuli ultimi subteretes vel subquadranguli,

* By I. M. Johnston.
** By N. Y. Sandwith.

pluricostati, pallide brunnei, indumento brevissimo ramoso furfuraceo-subtomentelli, nodis inter petiolos consociebus glandularum praediti; pseudostipulae haud foliaceae, ovatae vel lanceolatae, ad 3 mm. longae, indumento ramulorum praeditae; cirrhi simplices. Folia trifoliolata, petiolis petiolulisque pilis brevibus ramosis plus minusve dense pubescentibus; petioli 2.5–14 cm. longi; petioluli laterales 5–11 mm. longi, terminalis vulgo 1–3 cm. longus; foliola oblonga, obovato-oblonga vel obovata, apice breviter acute cuspidata, basi lateralia rotundata valde obliqua terminalia saepius cuneata, 5–19 cm. longa, 2.5–9.5 cm. lata, firme chartacea vel subcoriacea, supra nonnunquam aliquantum bullata atque nitidula, siccitate supra nigrescentia subtus pallidiora brunneo-chocolatina, supra passim (secus nervos dense) pilis parvis apicem versus ramosis (plerumque trifurcatis) stellatiformibus pubescentia, subtus pilis similibus molliter subtomentella, e basi 3–5-nervia, nervis supra impressis subtus cum rete venularum laxe reticulato prominentibus conspicuis. Inflorescentia terminalis, elongata; thyrsus pyramidalis ad 30 cm. longus, passim indumento ramulorum furfuraceo brunneo-chocolatino tomentellus; rami inferiores ad 10 cm. longi adscendentes vel patuli, omnes inferne nudi apice per trichotomias 3–4 ramosi cymis corymbosis congestis valde floriferis; bracteae bracteolaeque obscurae, circiter 1 mm. longae, cito deciduae. Calyx campanulatus, 4–5 mm. longus, dense tomentellus, dentibus brevibus triangulari-acutis ad 0.5 mm. tantum longis sed saepius satis conspicuis, costis nonnunquam usque medium calycem de dentibus descendentibus. Corolla pallide roseo-purpurea, infundibuliformis, 2–3 cm. longa; tubus extra basi excepta dense furfuraceo-pubescens, intus zona infrastaminali pilosa excepta glaber; limbus ad 2.5 cm. diametro, utrinque furfuraceo-pubescens. Stamina circiter 6 mm. supra tubi basin affixa, antica (longiora) 1.2–1.3 cm. longa, lateralia 1.05–1.1 cm. longa, filamentis basi excepta glabris; thecae antherarum divaricatae, 1.6 mm. longae, glabrae. Discus pulvinatus, circiter 1 mm. altus. Ovarium oblongum, subquadrangulare, 3–3.5 mm. longum, dense lepidotum; ovula biseriata, in quaque serie circiter 17. Fructus ignotus.

Type, *Smith 2977*, collected Jan. 19, 1938, in dense forest of Akarai Mountains, on height of land between Rio Mapuera (Trombetas tributary) and Shodikar Creek (Essequibo tributary), Brazil-British Guiana Boundary, alt. 600–800 m., and deposited in the herbarium of the Royal Botanic Gardens, Kew. Other collections deposited at Kew are: BRITISH GUIANA: Kibihiu Creek, Wiruni River, in high mixed forest on brown sand skirting Muri bush, *Fanshawe* in *Forest Dept. 2643*. BRAZIL: Amazonas: Rio Negro, in capoeiras at Barra, *Spruce 1774;* Para: near Campinha, *Burchell 9977, 9999*.

The corolla is variously described as pink, purplish-red, or pale purple and paler at the base. The branched hairs, shape of leaflets, and characters

and general appearance of the inflorescence and calyx ally this plant also to *A. cinnamomea* (DC.) Sandwith and *A. dispar* Bur. ex K. Schum. *A. mollis* has broader leaflets which are rounded and retuse, or only minutely cuspidate, at apex and frequently somewhat cordate at base; and there is a ferrugineous element in the color of the hairs and the dried leaflets which is lacking in that of *A. nigrescens*. The long hairs with conspicuous tuberculate bases—in *A. nigrescens* these are visible only under a strong lens—added to these differences give *A. mollis* a facies so distinct from that of the several collections of *A. nigrescens* that it would seem undesirable to treat the latter as a mere variety.

Arrabidaea cinerea K. Schum. var. **longipila** Sandwith, var. nov.

A planta typica pilis paginae foliolorum inferioris multo longioribus minus densis tomentum vix praebentibus differt.

Frutex scandens. Folia cum eis collectionis typicae indumento excepto bene congruentia. Inflorescentia ramis magis laxifloris, cymis minus corymbosis sed secus axes racemosis. Calyx 4.3 mm. longus. Corolla laete rosea, parva; tubus subcylindricus vel apicem versus ampliatus, 1.05 cm. longus, apice ad 5 mm. latus, extra dimidio superiore tantum furfuraceo-pubescens; limbus 11 mm. diametro, lobis ad 4 mm. longis atque latis utrinque furfuraceo-pubescentibus. Stamina prope medium tubum (altius quam in descriptione typi) 5 mm. supra basin affixa, longiora 4.5 mm. breviora 3.5 mm. longa; staminodium 2 mm. longum; antherarum thecae divergentes, glabrae, 1.5 mm. longae, connectivo appendice gracili brevi subulata terminato. Discus annulari-cupularis, 0.75 mm. altus. Ovarium ovoideo-oblongum, 1.3 mm. longum, minute lepidotum; ovula pro loculo biseriata, in quaque serie 8. Fructus ignotus.

Type, *Smith 3134*, collected Mar. 7, 1938, on exposed rock ledges in dense forest at western extremity of Kanuku Mountains, in drainage of Takutu River, alt. 300 m.; corolla rich pink.

Further collections of *A. cinerea*, which has been collected only once in Bahia, are greatly needed. Meanwhile, the fact that a bignoniaceous climber collected in the remote hinterland of British Guiana cannot, on present evidence, be separated as a species from a plant hitherto found in a far distant province of Brazil will seem surprising only to persons who fail to recognize the wide limits both of variation and distribution which must be allowed to species of this family.

ARRABIDAEA EGENSIS Bur. & K. Schum., ex descr.

Northern slope of Akarai Mountains, in drainage of Shodikar Creek (Essequibo tributary), dense forest, alt. about 500 m., *Smith 2921*. New to British Guiana; otherwise known from Amazonian Brazil.

MUSSATIA HYACINTHINA (Standl.) Sandwith

Western extremity of Kanuku Mountains, in drainage of Takutu River, in dense forest, alt. 200 m., *Smith 3238*. New to British Guiana; otherwise known from British Honduras to Venezuela, Peru, and Bolivia. For a full discussion of this genus see the writer's treatment in Rec. Trav. Bot. Néerl. **34**: 216–219.1937. The discovery of *M. hyacinthina* in British Guiana fulfils his expectation that the areas of this species and *M. Prieurei* met there.

DISTICTELLA PULVERULENTA Sandwith

Brazil-British Guiana Boundary: Akarai Mountains, height of land between drainage of Rio Mapuera (Trombetas tributary) and Shodikar Creek (Essequibo tributary), in dense forest, alt. 600–800 m., *Smith 2979*. Previously known from Amazonian Brazil and French Guiana.

ADENOCALYMMA HELICOCALYX Kze.

Western and northwestern slopes of Kanuku Mountains, in drainage of Takutu River, in dense forest, alt. 150–200 m., *Smith 3084, 3370*. First record for British Guiana; otherwise known from Trinidad and Venezuela: allied species in Central America are perhaps conspecific. As pointed out by the writer (Rec. Trav. Bot. Néerl. **34**: 211–212.1937), this species cannot possibly be maintained in *Adenocalymma* as there restricted, but fruiting collections are needed before it can be assigned to a known or new genus.

GODMANIA AESCULIFOLIA (H. B. K.) Standl.

Transition belt from savanna to forest, between Takutu River and Kanuku Mountains, *Smith 3363*. New to British Guiana; previously known from Mexico to Amazonian Brazil and Bolivia. The writer can see no good reason for distinguishing *G. Uleana* Kraenzl., which was collected in the Rio Branco neighborhood, from *G. aesculifolia* even as a variety.

TABEBUIA STENOCALYX Sprague & Stapf

Northwestern slopes of Kanuku Mountains, in drainage of Moku-moku Creek (Takutu tributary), dense forest, alt. 200–300 m., *Smith 3497*. A tree 35 m. high, with small buttresses. Rarely collected in British Guiana, the only gathering seen being from the Barama River, *im Thurn* in *Jenman 1947*. Otherwise known from Trinidad and Brazil (?).

TABEBUIA CHRYSOTRICHA (Mart.) Standl.

Western extremity of Kanuku Mountains, in drainage of Takutu River, dense forest, alt. 150–200 m., *Smith 3090* (leaves and flowers), *3334* (fruits). Although fairly common locally, this species has not previously been

noted from British Guiana; otherwise known from Brazil. Its relationships with *T. chrysantha* (Jacq.) Nichols. of Venezuela require investigation.

Tabebuia eximia (Miq.) Sandwith, comb. nov.

Tecoma eximia Miq. Linnaea **22**: 803.1849; Bur. & K. Schum. in Mart. Fl. Bras. **8** (2): 325.1897.

Brazil (Bahia).

Tabebuia Ipe (Mart.) Standl. var. **integra** (Sprague) Sandwith, comb. nov.

Tecoma Ipe Mart. var. *integra* Sprague, Bull. Herb. Boiss. II. **5**: 86.1904.

Brazil, Paraguay, and northern Argentine. The writer's present conviction is that both *T. Avellanedae* Lor.;Griseb. of northwestern Argentine and *Tecoma violacea* Hub., nomen, of Brazil are to be identified with this variety which should not, on present evidence, be separated specifically from *T. Ipe*.

ACANTHACEAE*

Anisacanthus secundus Leonard, sp. nov.

Herba, caulibus teretibus tenuiter striatis sparse puberulentis; lamina foliorum lanceolata acuminata subfalcata, basi obtusa vel rotundata, glabra (costa et venis supra puberulentis subtus pilosis exceptis); petioli puberulenti; flores secundi; racemi ramosi; bracteae anguste triangulares puberulentae; calyx campanulatus glanduloso-puberulentus, segmentis subulatis; corolla rubra sparse pubescens; capsulae glabrae vel glanduloso-puberulentae; semina plana alba minute rugulosa.

Herb 1–3 m. high; stems terete, finely striate, sparingly puberulent; leaf-blades lanceolate, up to 8 cm. long and 2.5 cm. wide, acuminate, subfalcate, obtuse or rounded at base, glabrous except costa and veins, these puberulent above and the costa beneath white-pilose (hairs up to 1 mm. long), bearded in the axils of the veins, the cystoliths inconspicuous; petioles up to 5 mm. long, puberulent; flowers secund, borne in small panicled racemes terminating the branches; rachis puberulent; pedicels 2.5 mm. long; bracts narrowly triangular, about 2 mm. long, puberulent; calyx campanulate, the segments subulate, 2–2.5 mm. long, 1 mm. wide at base, glandular-puberulent; corolla bright red, 3.5 cm. long, slightly curved, sparingly and finely pubescent, about 3 mm. in diameter at base, narrowed above ovary to 2 mm., thence gradually enlarged to 6 mm. at mouth, the lips about 9 mm. long; style finely and sparingly pubescent; capsules 2 cm. long, 6 mm. broad, glabrous or with a few minute hairs, these glandular except at extreme tip of the capsule; seeds flat, white, about 5 mm. in diameter, minutely roughened.

Type, *Smith 3165*, collected Mar. 9, 1938, in a clearing at the western

* By E. C. Leonard.

extremity of Kanuku Mountains, in drainage of Takutu River, alt. 200 m., and deposited in the U. S. National Herbarium (no. 1,742,132). Additional specimens examined: VENEZUELA: Cariaquita, *Bond, Gillin, & Brown 15*. Carora to La Cuchilla, Lara, *Pittier 13120*. Cristobal Colón, *Broadway 124, 338*. Perijá, Zulia, *Tejera 156*.

This is closely related to *A. Malmei* Lindau from Paraguay, but is distinguished from that species by its glandular calyces, larger corollas, and longer hairs on the costa of the leaf-blades beneath.

RUBIACEAE*

Alseis Smithii Standl., sp. nov.

Arbor 20-metralis, ramulis brunneis obtuse tetragonis glabris, internodiis brevibus; stipulae oblongo-triangulares deciduae attenuato-acuminatae 6–12 mm. longae; folia breviter petiolata crasse papyracea, petiolo usque 1 cm. longo glabro; lamina oblongo-oblanceolata 10–18 cm. longa 3–6 cm. lata longe anguste acuminata, basin versus longe anguste attenuata, sublucida, costa nervisque supra prominentibus, subtus fere concolor, secus costam sparse hirtello-pilosa vel glabrata, aliter saltem in statu adulto glabra, costa gracillima elevata, nervis lateralibus utroque latere ca. 14 angulo paullo latiore quam recto adscendentibus prominentibus subarcuatis vel fere rectis prope marginem arcuato-conjunctis, venulis prominulis laxe reticulatis; spicae in paniculas axillares pauciramosas dispositae subdense multiflorae usque 25 cm. longae glabrae vel glabratae; calyx ad apicem capsulae persistens vix 1 mm. altus, dentibus ovatis acutis; capsula clavata 6 mm. longa, basin versus longe anguste attenuata, apice 1.5 mm. lata.

Type, *Smith 3236*, collected Mar. 14, 1938, in dense forest near western extremity of Kanuku Mountains, in drainage of Takutu River, alt. 200 m., and deposited in the herbarium of the Field Museum. The capsules are only about half as large as those of other South American species. Otherwise the present plant is similar to *Alseis Blackiana* Hemsl. and *A. labatioides* Karst.

Hoffmannia megistophylla Standl., sp. nov.

Frutex 2-metralis, ramis crassis (1 cm. et ultra) subteretibus vetustioribus glabris vel glabratis, internodiis elongatis, nodis dense hirsuto-pilosis; stipulae non visae; folia maxima breviter petiolata crasse herbacea, petiolo crasso 3–3.5 cm. longo glabrato; lamina oblongo-elliptica ca. 42 cm. longa atque 17–19 cm. lata, apice rotundata atque subito breviter acuminata, basi breviter cuneato-angustata, supra in sicco fusco-viridis glabra, costa nervisque manifestis sed vix elevatis, subtus pallidior, ubique pilis minutis

* By P. C. Standley.

adpressis conspersa, costa crassa elevata, nervis lateralibus utroque latere ca. 22 angulo fere recto adscendentibus arcuatis prominentibus gracilibus, venulis vix prominulis laxe reticulatis; flores axillares vel e nodis defoliatis nascentes fasciculati pauci, pedicellis 6–9 mm. longis sparse minutissime subadpresso-pilosulis vel fere glabris; hypanthium glabrum semiglobosum 1.5–2 mm. longum; calyx late campanulatus 4–5 mm. longus et aequilatus vel latior luteus glaber truncatus remote obsolete denticulatus; corolla lutea in alabastro apice abrupte caudata extus glabra 2.5 cm. longa, tubo fauce ca. 7 mm. lato, lobis vix 5 mm. longis ovato-rotundatis obtusis atque breviter caudato-apiculatis.

Type, *Smith 2930*, collected Jan. 18, 1938, in dense forest on southern slope of Akarai Mountains, in drainage of Rio Mapuera (Trombetas tributary), State of Para, Brazil, alt. 500–700 m., and deposited in the herbarium of the Field Museum. A rather isolated and unusually well marked species, for the genus, because of the huge leaves, and the extraordinarily large corolla with caudate lobes.

Ixora xantholoba Standl., sp. nov.

Frutex 3-metralis praeter inflorescentiam omnino glaber, ramulis fusco-ochraceis vel brunnescentibus teretibus, internodiis elongatis; stipularum vagina ca. 2 mm. longa apice rotundata adpressa, apice in setas 2 breves rigidas desinens; folia mediocria brevissime petiolata subcoriacea, petiolo crasso vix ultra 4 mm. longo; lamina elliptica vel oblongo-elliptica 11–13 cm. longa 4.5–6.5 cm. lata abrupte acuminata, acumine anguste triangulari ca. 1 cm. longo, basi breviter acutata, supra sublucida, costa prominente, nervis prominulis, subtus paullo pallidior, costa prominente, nervis lateralibus utroque latere ca. 11 angulo lato adscendentibus subarcuatis prominentibus prope marginem arcuato-conjunctis, venulis obsoletis vel obscuris; inflorescentia terminalis sessilis laxe pauciflora cymoso-paniculata 3 cm. tantum longa, ramulis minutissime puberulis, bracteis acuminatis basi dilatatis ad 2.5 mm. longis, floribus sessilibus vel usque 1.5 mm. longe pedicellatis; hypanthium glabrum 1 mm. longum, calyce truncato, dentibus remotis ovatis obtusis vix 0.5 mm. longis; corolla extus sparse minutissime puberula, tubo rubro gracillimo 9–10 mm. longo, lobis 5 ovalibus luteis 4 mm. longis apice rotundatis intus glabris; antherae semiexsertae.

Type, *Smith 2141*, collected Sept. 28, 1937, on edge of forest near Twasinki Falls, Essequibo River, lat. about 5°5′N., and deposited in the herbarium of the Field Museum.

Mitracarpus fruticosus Standl., sp. nov.

Suffrutex decumbens ramosus, ramis subteretibus brunnescentibus sparse minute patenti-pilosis, internodiis foliis brevioribus; stipularum

vagina lata vix ultra 1 mm. longa puberula, setis pluribus rigidis gracilibus usque 2.5 mm. longis aucta; folia subsessilia lanceolato-oblonga vel ovato-oblonga 2.5–3.5 cm. longa 6–12 mm. lata acuminata, basi cuneato-contracta, supra in sicco fusco-viridia scaberulo-puberula, nervis obsoletis vel obscuris, subtus fere concoloria ubique breviter hirtello-pilosula, costa gracili prominente, nervis lateralibus utroque latere ca. 3 angulo acutissimo adscendentibus; flores capitati, capitulis terminalibus solitariis, interdum quoque ex axilla suprema nascentibus, basi bracteis 2 foliis conformibus fulcratis ca. 1 cm. latis; hypanthium glabrum vel glabratum; calycis dentes 4 erecti usque 2.5 mm. longi valde inaequales anguste attenuati glabri; corolla alba extus sparse puberula, calyce paullo longior, lobis patentibus brevissimis; capsula prope medium circumscisse dehiscens.

Type, *Smith 3642*, collected Apr. 22, 1938, on open rocky summit of Mount Iramaikpang, northwestern portion of Kanuku Mountains, alt. 975 m., and deposited in the herbarium of the Field Museum. In general appearance the plant is less suggestive of the genus *Mitracarpus* than of *Borreria*, and, except for the suffrutescent habit, it is much like *B. laevis* (Lam.) Griseb.

Palicourea expetens Standl., sp. nov.

Frutex 4-metralis, ramulis obtuse tetragonis in sicco brunneis glabris, internodiis elongatis; stipularum vagina truncata ad 3 mm. alta, interdum dentibus brevibus triangularibus aucta; folia quaterna breviter petiolata crasse membranacea, petiolo gracili 1–1.5 cm. longo; lamina oblanceolato-oblonga 14–18 cm. longa 4–6 cm. lata subito vel sensim longe angusteque attenuato-acuminata, basin versus longe sensim attenuata, supra in sicco sublucida, costa nervisque prominulis, subtus fere concolor, costa gracili elevata, nervis lateralibus utroque latere ca. 15 angulo latiusculo adscendentibus arcuatis prominentibus marginem fere attingentibus, venulis transversis subparallelis crebris prominulis; inflorescentia terminalis 10 cm. longe pedunculata erecta cymoso-corymbosa basi 5-radiata, radiis angulo recto divergentibus basi ebracteatis, corymbo 6 cm. longo 13 cm. lato, ramis sparse puberulis, ultimis remotifloris scorpioideis, bracteis minutis vel obsoletis, floribus arcte sessilibus; fructus juvenilis glaber apice calyce vix 0.5 mm. alto remote denticulato coronatus, disco tumido calyce triplo longiore.

Type, *Smith 2982*, collected Jan. 19, 1938, in dense forest of Akarai Mountains, on height of land between drainage of Rio Mapuera (Trombetas tributary) and Shodikar Creek (Essequibo tributary), Brazil-British Guiana Boundary, alt. 600–800 m., and deposited in the herbarium of the Field Museum. The relationship of the present plant is with *P. corymbifera* (Muell. Arg.) Standl., *P. umbellata* DC., and *P. quadrifolia* Rudge. The first has similar inflorescence but differs in having terete, not

quadrangular branches. The other two have quadrangular branches, but their inflorescence is fastigiate, not at all similar to that of *P. expetens*, and, in addition, in both the bracts are linear and conspicuously developed.

COMPOSITAE*

Wulffia rubens Alexander, sp. nov.

Planta a speciebus omnibus adhuc descriptis floribus radii rubentibus, capitulis solitariis longe pedunculatis valde differt.

Subscandent herb 2–3 m. high, the stems and branches striate, ridged, appressed-strigose; leaves opposite, the petioles 10–15 mm. long, the blades ovate-elliptic, up to 15 cm. long, 2–5 cm. wide, short-acuminate, remotely and shallowly serrate at margin, cuneate or rounded at base, scabrous on both surfaces, the midrib shortly decurrent on a stem-ridge; heads solitary, on peduncles 7–13 cm. long; involucres hemispherical, about 5 mm. high and 10–15 mm. across, the bracts subacute, appressed-silky-strigose, in 2 or 3 series, the chaff 5 mm. long, oblong, strongly striate, acute with horny tips, dull red, pubescent at apex; ray-florets dull red, sterile, the corolla about 8 mm. long, ligulate, notched at apex; disk-florets perfect, orange-yellow, 5–6 mm. long; fruiting heads about 22 mm. across, the chaff much enlarged and persistent; achenes drupaceous, 5–6 mm. long, obovoid, umbilicate at apex.

Type, *Smith 3456*, collected Apr. 5, 1938, on edge of dense forest on northwestern slopes of Kanuku Mountains, in drainage of Moku-moku Creek (Takutu tributary), alt. 200–300 m.

Vernonia chrysotricha Alexander, sp. nov.

Lepidaploa Scorpioideae Axilliflorae: capitulis in axillis foliorum in fasciculos dense aggregatis, sessilibus, plurifloris; foliis ovatis subsessilibus subtus incano-sericeis supra papilloso-pilosis; caulibus pubescentibus viridi-aureis.

Erect shrub 1–2 m. high, the stout branches clothed with a velvety greenish-golden dense pubescence; leaf-blades ovate-elliptic to broadly elliptic, 5–9 cm. long, obtuse to acute or short-acuminate at apex, rounded to subcordate at base, rugulose, densely sericeous beneath, green and thinly papillose-pilose above; petioles about 3 mm. long, pubescent as the branches; heads 20–25-flowered, sessile in fascicles of 1–10 in the upper leaf-axils; involucres broadly campanulate, 5–7 mm. high, the bracts in about 6 series, ovate-lanceolate, sparsely arachnoid-pubescent, all except the innermost aristate; corollas rich blue, the slender tube 2 mm. long, the obconic limb 0.4 mm., the linear-lanceolate lobes 2.2 mm. long, pubescent

* By E. J. Alexander.

at the tip; achenes densely pubescent, 1.5 mm. long; outer pappus of about 15 linear-lanceolate fimbriate scales nearly 1 mm. long; inner pappus of 35–40 minutely barbellate bristles 3.5 mm. long.

Type, *Smith 3648*, collected Apr. 22, 1938, on open rocky summit of Mount Iramaikpang, northwestern portion of Kanuku Mountains, alt. 975 m. The species is distinguished from other known species of British Guiana by its densely fasciculate heads as well as by its golden pubescence.

INDEX

Acanthaceae....213
Anacardiaceae....189
Annonaceae....179
Apocynaceae....207
Asclepiadaceae....208
Bignoniaceae....209
Boraginaceae....209
Cactaceae....199
Caesalpiniaceae....184
Caryocaraceae....195
Celastraceae....189
Compositae....217
Cyatheaceae....162
Cyperaceae....169
Dilleniaceae....194
Ebenaceae....205
Eriocaulaceae....170
Gentianaceae....207
Guttiferae....196
Hernandiaceae....181
Hippocrateaceae....190
Hymenophyllaceae....162
Icacinaceae....193
Loganiaceae....206
Loranthaceae....175
Malpighiaceae....188
Marattiaceae....169
Melastomataceae....201
Meliaceae....186
Menispermaceae....178
Mimosaceae....183
Moraceae....174
Myrsinaceae....203
Nyctaginaceae....177
Ochnaceae....194
Olacaceae....176
Orchidaceae....172
Papilionaceae....185
Passifloraceae....197
Piperaceae....174
Polygonaceae....176
Polypodiaceae....163
Pontederiaceae....170
Rhamnaceae....193
Rosaceae....181
Rubiaceae....214
Sapindaceae....193
Vacciniaceae....203
Vochysiaceae....188
Zingiberaceae....171

Caribbean Studies—I

Two New Linocieras and a Review of the Antillean Species

W. H. Camp and J. Monachino
(*New York Botanical Garden, New York, N. Y.*)

Of the many problems confronting future students of the Oleaceae, not the least will be the establishment of certain generic lines within the family. This is perhaps nowhere more true than in *Linociera* and its close relatives. Whether this genus will be retained or united with its close allies (*Haenianthus* and *Chionanthus*) we do not predict. Our problem, for the present, is confined to an organization of the species of the Antillean Region as we understand them. In addition, we are describing two new species, one from Porto Rico and the other from Colombia. The latter has not been included in the key, but it will be discussed at the end of the paper.

The inflorescence, despite the emphasis placed on it by previous writers, is a character which has been incompletely understood. In the groups of species to be regarded as more primitive with reference to this character, the inflorescence branches apparently are truly axillary and lateral. On the other hand, in *L. ligustrina* and *L. bumelioides* the inflorescence is terminal and determinate. However, this character is not particularly clear-cut in the majority of the species. In some of them the inflorescence has been described as terminal, or, with a few additional lateral and axillary branches. Actually, in these — and therefore the majority of the species —the inflorescence merely appears to be terminal due to the absence of fully developed leaves which sometimes subtend its upper branches.

Another character that has been misleading is the terminal bud which, in most cases, is actually present but too small to be seen readily. In the majority of the species, this minute bud gives rise to the main axis of the stem during its growth the following (or sometimes the same) season. For this reason, certain species were supposed to possess "terminal" flowering branches and "lateral" fruiting branches. This also accounts for the confusion of certain species differentiated on the basis of the terminal bud.

Since this paper does not represent a monographic study, the synonymy given is incomplete, whereas a key to the Antillean species, a working bibliography consisting of a citation to the original description, its combination with *Mayepea* (if this has been made), and also a reference to the best available description, are included. The localities here listed, except where noted, are from specimens deposited in the Britton Herbarium of the New York Botanical Garden. We also wish to thank the Curator of the U. S. National Herbarium for the loan of certain other material.

KEY TO THE ANTILLEAN SPECIES OF LINOCIERA

Petals scarcely exceeding the elongate anthers.....1. *L. ligustrina*
Petals much longer than the anthers.
Anther connectives with acuminate extensions nearly equaling the anther cells..2. *L. caribaea*
Anther connectives not exserted, or if so, then only short-mucronate.
Calyx lobes minutely crisped gray-puberulent.....3. *L. bumelioides*
Calyx lobes with yellow-rusty pubescence, or glabrous.
Lower surface of leaves everywhere pubescent and markedly reticulate, apex pungent tipped.....4. *L. dictyophylla*
Lower surface of leaves glabrous, or sparsely pubescent only on the mid-rib, or with tufts in the axils of the primary veins.
Lobes of calyx glabrous or occasionally with a few scattered hairs; ovary sparsely pubescent; (leaves acuminate at apex).....5. *L. domingensis*
Lobes of calyx evidently pubescent; ovary glabrous.
Leaves essentially without tufts of hairs in axils of primary veins; filaments more than ½ the length of anthers.....6. *L. axilliflora*
Leaves with tufts of hairs in axils of primary veins; filaments less than ½ the length of anthers (except in a form of *L. Dussii*).
Style much shorter than ovary; leaves slightly emarginate.....7. *L. Bakeri*
Style equaling or longer than ovary; leaves obtuse to acuminate, rarely emarginate.
Petals 15–22 mm. long; panicles mostly 6–10 cm. long; petioles 10–15 mm. long.....8. *L. Dussii*
Petals 3–10 mm. long; panicles mostly 2–4 cm. long; petioles 3–6 mm. long.
Leaves 6–9 cm. long, not apiculate at apex, stigma cleft....9. *L. jamaicensis*
Leaves 4.5–6 cm. long, mostly apiculate at apex; stigma shallowly lobed.....10. *L. Holdridgii*

1. LINOCIERA LIGUSTRINA Sw. Fl. Ind. Occ. **1**: 50. 1797.

Thouinia ligustrina Sw. Prodr. 15. 1788.
Mayepea ligustrina Kuntze, Rev. Gen. 412. 1891.
(For descr. see: Urban, Bot. Jahrb. **15**: 343. 1892, as *Mayepea ligustrina*.)

Jamaica; Cuba: Matanzas and eastward, mainly in Oriente; Hispaniola.

2. LINOCIERA CARIBAEA (Jacq.) Knobl. Bot. Centr. **61**: 84. 1895.

Chionanthus caribaea Jacq. Coll. **2**: 110. 1788.
Mayepea caribaea Kuntze, Rev. Gen. 411. 1891.
(For desc. see Urban, Bot. Jahrb. **15**: 346. 1892, as *M. caribaea*.)

Hispaniola; Porto Rico; Vieques; Culebra; St. Croix; St. Thomas (ex Urban); St. Martin (ex Boldingh); Saba (ex Urban); St. Eustatius; Nevis (ex Swartz); Antigua; Montserrat; Guadeloupe; Dominica (ex Urban); Martinique; St. Lucia (ex Urban); St. Vincent; Bequia; Grenada (ex Urban); Tobago; Trinidad; "Guiana" (ex Eichler); Margarita; Venezuela.

3. LINOCIERA BUMELIOIDES Griseb. Cat. Pl. Cuba 169. 1866.

Mayepea bumelioides Krug & Urban; Urban, Bot. Jahrb. **15**: 344. 1892. (See for desc.)
Linociera Ekmanii Urban, Symb. Ant. **9**: 236. 1924.
Linociera miragoanae Urban, Arkiv Bot. **22A**: 86. 1929.
Linociera lanceolata Knobl. Fedde, Repert. **33**: 177. 1933.

Bahamas: Andros; Cuba: Isle of Pines; Matanzas to Oriente (incl. *Ekman 10206*, isotype of *L. Ekmanii* Urban, Britton Herb. N. Y. Bot.

Gard.); Hispaniola (Santo Domingo, *Ekman 12102*, U. S. Nat. Herb. No. 1711262, and Haiti, *Ekman H. 7954*, isotype of *L. miragoanae* Urb., U. S. Nat. Herb. No. 1412855).

Apparently Urban in describing both *L. Ekmanii* and *L. miragoanae* was under the impression that *L. bumelioides* was limited in distribution to Matanzas, Cuba. Consequently, he suspected that the specimens collected by Ekman in Oriente and Haiti might both represent new species. However, after examining a considerable series of specimens including isotypes of these rather recently described species, we conclude that neither *L. Ekmanii* nor *L. miragoanae* can be separated from *L. bumelioides*. Also (ex desc.), we have tentatively placed *L. lanceolata* here. The description (based on *Ekman H.15504* from Sto. Domingo) agrees exactly with specimens of *L. bumelĭoides* bearing immature flowers and known to us from various stations within the range of the species.

Linociera bumelioides var. **cubensis** (P. Wilson) Camp & Manachino stat. nov.

Mayepea cubensis P. Wilson, Bull. Torrey Club **42**: 390. 1915.
Linociera cubensis Urban, Symb. Ant. **9**: 236. 1924.

Although certainly distinct, we believe that *L. cubensis* is a localized segregate closely related to *L. bumelioides* and, as such, merits only varietal rank.

Leaves not revolute margined or only slightly so, subacute to rounded at apex; calyx lobes shorter than tube; filaments about ½ the length of anthers; stigma on short but obvious style. . . . . *L. bumelioides* (typical)
Leaves strongly revolute, apically obtuse to slightly emarginate; calyx lobes longer than tube; filaments about ¼ the length of anthers; stigma essentially sessile. . *L. bumelioides* var. *cubensis*

The following emended description, taken from the type (*Shafer 4253*) will serve, beyond the points mentioned in the key, to distinguish the variety from the typical form of the species.

Linociera bumelioides var. *cubensis* (P. Wilson) Camp and Monachino, desc. emend. Shrub to 6 meters in height with essentially glabrous twigs; leaves glabrous, narrowly oblong-oblanceolate, 6–9 cm. long, 1.5–2 cm. wide, coriaceous, the apex obtuse to emarginate, the base cuneate, decurrent on the petiole (petiole about 1 cm. long), the margin entire, strongly revolute, the primary veins reticulate below, prominent above, particularly where they form a strong marginal vein; inflorescence paniculate, terminal, 3–5 cm. long, 1.5–3 cm. wide, occasionally with a few subterminal axillary racemes, the rachis essentially glabrous, or the ultimate branches sparsely puberulent; bracts and bracteoles lanceolate, puberulent along the margin, particularly so at the apex; pedicels thickened, glabrous to sparsely puberulent, continuous with calyx; calyx minutely crisped-puberulent particularly on the apex and margins of lobes, the lobes lance-

olate, cut to below the middle of the calyx; corolla white, the petals 5–6.5 mm. long, 1.2–2 mm. wide, linear-oblong, flat, thin, 3–5-nerved, apically sub-acute or rounded. Anthers about 1.2 mm. long, elliptic, the connective exserted slightly beyond the cells; free portion of filaments about one fourth the length of anthers; ovary glabrous; stigma ovoid-globose, essentially sessile, slightly emarginate. Fruit unknown.

Cuba: Oriente.

4. LINOCIERA DICTYOPHYLLA Urb. Arkiv Bot. **22A**: 88. 1929.

Hispaniola: Haiti, Dominican Republic (Specimens, including isotype—*Ekman H.8557*—from U. S. Nat. Herb.).

4a. LINOCIERA URBANII Knobl. Fedde, Repert. **33**: 178. 1933.

L. pubescens Urb. & Ekm. Arkiv Bot. **22A**: 87. 1929. (See for desc.) Not *L. pubescens* (H. B. K.) Eichler.

This species, also from Haiti, is known to us only from the description and seems to differ from *L. dictyophylla* merely in possessing a glabrous ovary and possibly in having a slightly different leaf-shape, well within the variation which can be expected in the same species. Future collections and study of the types will be necessary to decide whether the two species should be retained or united; we have seen only the type of *L. dictyophylla* (*Ekman H.8577*, U. S. Nat. Herb. No. 1413124).

5. LINOCIERA DOMINGENSIS (Lam.) Knobl. Bot. Centr. **61**: 87. 1895.

Chionanthus domingensis Lam. Tabl. Encyc. **1**: 30. 1791.
Haenianthus incrassatus Griseb. Cat. Pl. Cuba 169. 1866. Not Flora 405. 1864.
Mayepea domingensis Krug & Urban; Urban, Bot. Jahrb. **15**: 344. 1892. (See for desc.)
M. domingensis incrassata Krug & Urban, ibid. p. 345.

Among the forty specimens examined by us, material was found which answered the description of *incrassata* (pro var.) as well as intermediate material; therefore, this variety should be included within the species proper rather than separated from it.

British Honduras (*Schipp 1301*); Jamaica; Cuba; Hispaniola; Porto Rico.

6. LINOCIERA AXILLIFLORA Griseb. Mem. Am. Acad. II. **8**: 519. 1862.

Mayepea axilliflora Krug & Urban, Bot. Jahrb. **15**: 345. 1892. (See for desc.)

Cuba: Camaguey and Oriente (mainly); Haiti (ex Urban); Porto Rico.

Our material consists of two distinct forms, one of which [Camaguey and Oriente (part)] has very pubescent buds, puberulent twigs and petioles; the other form [Oriente (part) and Porto Rico] has puberulent buds, glabrous twigs and petioles and, in addition, has somewhat thicker leaves. These forms may possibly represent distinct varieties or even species, but

the latter group (the more glabrous) are sterile specimens. For the present, it is best to retain both within the same species until more adequate material is available.

7. LINOCIERA BAKERI Urban, Symb. Ant. **5**: 530. 1908.—Cuba: Sta. Clara, Oriente.

8. LINOCIERA DUSSII (Krug & Urban) Knobl. Bot. Centr. **61**: 87. 1895. *Mayepea Dussii* Krug & Urban, Bot. Jahrb. **15**: 347. 1892. (See for desc.)

Dominica; Martinique.

Of this species a specimen of the type collection (*Duss 338*) from Martinique and another specimen from Dominica (*Fishlock 16*) are available. They are quite similar but the Dominican plant seems to have a more axillary inflorescence, a character, however, which is somewhat variable in this group and of little taxonomic importance. It differs further from the type of *L. Dussii* by its lack of a bilobed stigma; also, the filament approaches one-half the length of the anther, rather than being less than one half as long; and lastly, the connective of the anther is slightly more exserted than in *L. Dussii*. Despite these differences, we are retaining the two forms in the same species, at least until more material is available.

9. LINOCIERA JAMAICENSIS Urban, Symb. Ant. **2**: 456. 1901.—Jamaica.

10. **Linociera Holdridgii** Camp & Monachino, sp. nov.

Arbor parva ad 4 m. alta; ramis hornotinis minutissime puberulis; petiolis circiter 5 mm. longis puberulis; foliis elliptico-obovatis, praeter subtus venarum axillas barbellatas glabris, 4–5.5 cm. longis, 2.5–3.5 cm. latis, basi obtusis vel late cuneatis, apice obtusis vel abrupte acuminatis et brevissime mucronulatis, margine integris subcallosis, utrinque nitidis, venulis subtus bene reticulatis; inflorescentiis axillaribus subpaniculatis vel racemosis; rhachidibus 1–3 cm. longis puberulis; bracteis minutis dense puberulis; pedicellis sub anthesi 1–3 mm. longis puberulis; calyce patente pilosulo prope ad basin fisso, lobis triangularibus vel late lanceolatis; petalis 4 oblongo-linearibus, 3–4 mm. longis, circiter 0.8 mm. latis, planis, 3-nerviis; filamentis brevissimis vel subnullis, antheris oblongis circiter 1.5 mm. longis et 1 mm. latis, connectivis supra loculos perpaullo productis; stylo quam ovario glabro vix longiore, stigmate capitate tenuiter emarginato.

Porto Rico: Guánica, Insular Forest. *L. R. Holdridge 6*, Sept. 20. 1938. Type, Britton Herb. N. Y. Bot. Gard. *Holdridge 6A*, March 22, 1939 (in fruit), from same tree as type.

In material other than the type the leaves are sometimes narrower and rarely apically shallowly retuse; also, the tufts of hairs in the axils of the veins are somewhat obscure in a few leaves; fruit small (immature?), 6 mm. long, 4 mm. wide, black.

A New Species from the Caribbean Area of South America

Linociera santamartensis Camp & Monachino, sp. nov.

Arbor ad 15 m. alta vel pluscula; ramis hornotinis puberulis; petiolis 1–1.5 cm. longis puberulis; folliis elliptico-lanceolatis, praeter subtus venarum axillas barbellatas glabris, 8–12 (–15) cm. longis, 3–4 cm. latis, basi acutis, apice acuminatis, margine integris, venulis subtus obscure reticulatis; inflorescentiis pseudo-terminalibus paniculatis; rhachidibus majoribus ad 6 cm. longis puberulis; bracteis linearibus dense puberulis; pedicellis sub anthesi subnullis; calyce patente pilosulo, lobis late triangularibus; petalis 4 linearibus, circiter 1 cm. longis et 1 mm. latis, leviter concavis; filamentis circiter 0.3 mm. longis, antheris ovatis circiter 0.8 mm. longis et 0.5 mm. latis, connectivis supra loculos non productis; stylo quam ovario glabro vix longiore, stigmate profunde bilobato.

Colombia: occasional in forest valleys and on hillsides, 500–1500 feet elevation, Dept. of Magdalena, 5–8 miles south of Mamatoca (near Santa Marta), *H. H. Smith 780A* (in flower) Nov. 27, 1898. Type, Britton Herb. N. Y. Bot. Gard. Same locality, *H. H. Smith 780B* (in flower and with immature fruit), Jan. 15, 1899.

This species, previously confused with *L. caribaea*, may be easily separated from it on the basis of its anthers. The connectives of *L. caribaea* are long and attenuate, nearly equaling the cells, whereas in our species the connectives are not produced. Also, the petals of our plant are not apically narrowed as in *L. caribaea*, being nearly as wide at the apex as they are at the base. Of the American species known to us, *L. santamartensis* seems to be most closely related to *L. Dussii*, but it is distinguished from the latter, among other characters, by its much smaller flowers as well as by its denser and somewhat different type of pubescence.